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Original Articles.

AMPUTATION THROUGH THE HIP-JOINT WITH A SYNOPSIS OF 267 CASES IN WHICH THE AUTHOR'S METHOD WAS EMPLOYED.*

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From the dawn of surgery to within a very recent period, amputation at the hip-joint has been considered one of the gravest surgical operations.

In 1808 Earle[1] described it as "unjustifiable," and said: "I have seen it done and am now very sure that I will never do it unless it be on a dead body." In the third edition of his "Principles of Military Surgery," Hennen,[2] in 1829, said: "Obliged as we are, coolly to form our calculations in human blood, there is still something in the idea of removing the quarter of a man, at which the boldest mind naturally recoils. There is not one patient in a thousand that would not prefer instant death to the attempt." Even as late as 1881, Prof. John Ashhurst, Jr.,[3] one of the highest authorities in modern surgery, wrote: "The removal of the lower limb at the coxo-femoral articulation may be properly regarded as the gravest operation that the surgeon is ever called upon to perform, and it is only within a comparatively recent period that it has been accepted as a justifiable procedure."

ORIGIN.

The origin of this amputation is involved in no little obscurity. Dr. Louis Coronat[4] claims that at about the beginning of the eighteenth century a French surgeon, Morand, was the first to have the boldness to conceive the idea of severing the lower extremity from the body at the coxo-femoral articulation, and that the first operation of this nature was done by Lacroix, of Orleans, in 1748. It is now well known that this operation by Lacroix was in no sense an amputation at the hip. The ligamentum teres and the sciatic nerve were the only tissues which had not completely sloughed away at the line of demarcation in a case of gangrene which destroyed the entire lower extremity, and these Lacroix divided with scissors.

In the fourth volume of "Sabatier's Médecine Opérative," published in 1832, there is an account of another operation of this character, done by Perault in the case of Francois Gois, a man 21 years of age, whose thigh had been crushed by the pole of a wagon. Septic infection followed by extensive suppuration and gangrene ensued until all the soft parts were dead and were separated from the bone—*le femur était disséqué de toutes parts.* Through these gangrenous and bloodless soft tissues the amputation was made.

Mr. Frederick Treves, in Volume I of his "Manual of Operative Surgery," claims that Mr. Henry Thomson, surgeon to the London Hospital, was the first to perform this operation, about 1777, but the first clearly authentic record of an amputation at the hip-joint, through living tissues, is of one performed by Mr. Kerr of Northampton, in 1778, on a girl of 11 years, who was suffering from destructive osteo-arthritis at the hip and who survived the operation eighteen days.[5] The early history of this procedure should not be passed over without mentioning the name of the French surgeon, Ravaton, who in 1743 clearly and distinctly proposed a method of amputation with disarticulation at the hip-joint, although he did not live to carry into actual practice the operation he devised.

Professor Ashhurst, writing in 1881, voiced the accepted opinion of surgeons when he said: "The most pressing risk in amputation at the hip-joint is that of hemorrhage," and with this fact in mind it is not surprising that the ingenuity of surgeons has been earnestly employed in devising means for controlling the circulation.

CONTROL OF HEMORRHAGE.

Beginning with compression of the aorta by digital or mechanical means, as advised by Pancoast, Lister, Abernethy, Donald Maclean and others, and later the intrarectal lever of Davy for compressing the common iliac artery against the pelvis, the first really valuable suggestion for controlling hemorrhage was that of Richard Volkmann, the distinguished German surgeon.[6] In 1874 he reported three cases of hip-joint amputation in which he had used the Esmarch elastic bandage for driving the blood out of the member to be amputated into the body, and then had placed an elastic loop in the femoro-scrotal commissure, drawing the ends upward and outward, the anterior passing parallel with Poupart's ligament, the posterior near the gluteal fold, in which position it was held by an assistant. To further secure it in position loops of roller bandage were thrown beneath the rubber tourniquet in front and behind, and upon these, during the operation, upward traction was also made by an assistant. In two of these cases there was no hemorrhage. In one, Volkmann says, "a severe hemorrhage occurred which I succeeded in stopping by compression."[7] Of the three cases two died. It may be that the hemorrhage in one case and the fatal result in two of the three operated upon discouraged surgeons at large from repeating this innovation of Volkmann's. But scant mention was made of it in surgical literature, and it is well known the method was not adopted.

In *The Lancet* in 1883, Mr. Jordan Lloyd advised the use of the figure-of-eight elastic bandage which included

* Read before the New York State Medical Association, October, 1900.

the posterior aspect of the thigh in its grasp and then passed over the rim of the pelvis, and around the body, making compression of the external iliac by means of a roller bandage placed over this artery. But this method, as in the case of Volkmann, did not meet with the consideration it deserved and failed to be generally adopted.

The use of the needle or skewer for the control of hemorrhage in amputation at the hip was first employed on July 28, 1880, by Trendelenburg, at the suggestion of Newman:[8] "A steel needle 38 cm. long, 6 mm. broad, biconvex on cross section, and in the thickest portion or center 2 mm. thick, was inserted just below the anterior iliac spine and carried in the direction of the perineum, passing between the neck of the femur and the vessels, and emerging on the inner aspect of the thigh, near the perineo-femoral crease. A figure-of-eight ligature was then thrown over the ends of the needle and in front of the thigh, thus constricting the femoral artery and vein. The limb having been previously emptied of blood by the application of Esmarch's bandage as high as the middle of the thigh, a long knife nerve. A piece of cord was passed under the heel and point of the needle, forming a figure-of-eight ligature."

Myles, of England, advised a slight modification of the Newman-Trendelenburg procedure. A steel skewer was passed through the thigh, the point entering an inch below Poupart's ligament, going external to the femoral artery and internal to the neck of the femur and emerging a little above the gluteal fold. An India-rubber cord in figure-of-eight fashion was then to be thrown over the ends of the skewer and the inner aspect of the thigh. The amputation was by lateral flaps.

Author's Method.—In theory and practice it is clear that any method of constriction which does not with absolute safety control all of the blood-vessels at the level of the hip-joint must prove unsatisfactory. In 1888 I removed the outer half of the clavicle, the glenoid, acromion, and coracoid processes, and part of the body of the scapula, together with the upper extremity, of a patient suffering from a large sarcoma of the head of the humerus. Not wishing to perform a preliminary deligation of the subclavian in its third division, I transfixed, with a stout mattress needle, the major pectoral

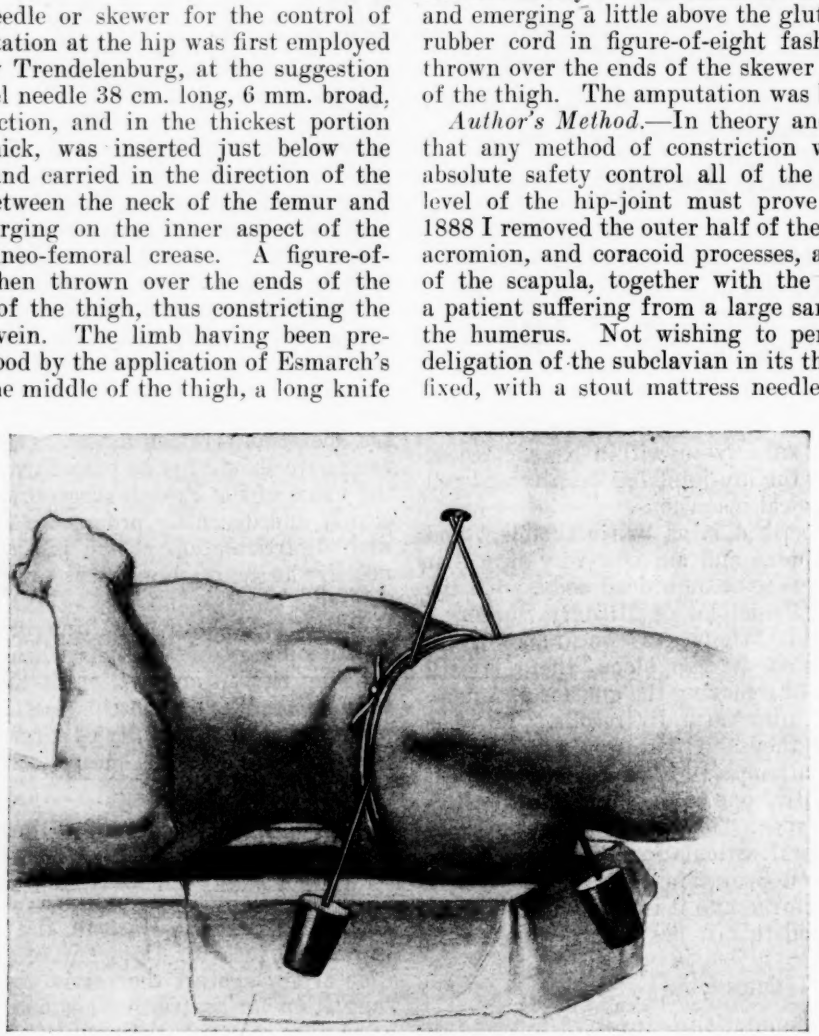

FIG. 277.—Hip-joint amputation. Pins and rubber-tube tourniquet in position. The Esmarch bandage has been removed.

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was carried through the front of the thigh 2 cm. beyond the needle and parallel with it (Lisfranc), and a flap formed by cutting by transfixion. The vessels were then tied, and the needle and figure-of-eight loop removed, and the head of the femur disarticulated. The needle was again introduced behind the bone, the figure-of-eight carried posteriorly, and the posterior flap then formed."

In 1886 (August 10), Dr. Muscroft,[9] of Cincinnati, employed a somewhat similar method: "A needle one-eighth of an inch wide, slightly bent at the point, about the thickness of a dime and four inches long, was introduced perpendicularly into the front of the thigh about an inch and a half below Poupart's ligament. The exact point of entrance was one-fourth of an inch internal to the combined sheaths of the vein, artery and nerve. The point was pushed beyond the vessels, then turned outward until the needle had passed beyond them; the point was then pushed out through the integument. The needle was then behind the vessels and muscle about three inches from the shoulder, and, at about the same distance from the joint on the dorsum scapulæ, I introduced a second needle in such a way that when I carried a strong rubber tube several times around the shoulder, above these needles, with strong traction, the compression was so great that hemorrhage was controlled during the amputation. It occurred to me at the time that the same plan was equally feasible at the hip. In February, 1890, I successfully applied this method in my first hip-joint amputation, and in the improvements which have been made on the original technique I believe I have demonstrated and established an operation in which hemorrhage in amputation at the hip-joint is as safely and as easily controlled as at any other portion of the thigh.

The patient should be placed with the sacrum resting upon the corner of the operating-table, the sound limb and arms being wrapped with cotton batting, and the body thoroughly protected from unnecessary loss of heat. The member to be removed should be emptied of blood

by elevation of the foot and by the application of the Esmarch bandage, commencing at the toes. When a tumor exists, or when septic infiltration is present, pressure should be exercised only to within about six inches of the diseased area for fear of driving the new elements or septic material into the circulation. After injuries with great destruction—crushing or pulpifaction—one must often trust to elevation alone, as the Esmarch bandage can not always be applied. In this last group of cases where hemorrhage more or less severe has occurred, the injection of a sufficient quantity of normal salt solution should precede any operation. Before the Esmarch bandage is removed the rubber tubing constrictor should be applied. The object of this constriction is the perfect occlusion of every vessel above the level of the hip-joint, permitting the flaps to be made, disarticulation to be completed and the vessels secured without hemorrhage and before the tourniquet is removed. To render the manipulation of the femur, in the process of disarticulation, free from the danger of the tourniquet slipping, I employ two strong steel needles or skewers, three-sixteenths of an inch in diameter and ten inches long. One of these is introduced one-fourth of an inch below the anterior superior spine of the ilium and slightly to the inner side of this prominence, and is made to traverse superficially, for about three inches, the muscles and fascia on the outer side of the hip, emerging on a level with the point of entrance. The point of the second needle is thrust through the skin and tendon of origin of the adductor longus muscle one-half an inch below the femoro-perineal commissure or crotch, the point emerging just below the tuber ischii. The points should be shielded at once with cork to prevent any possible injury to the operator. No vessels are endangered by these pins. A mat or compress of sterile gauze, about two inches thick and four inches square, is laid over the femoral artery and vein as they cross the brim of the pelvis, and over this a piece of strong white rubber tubing one-half inch in diameter when unstretched, and long enough, when in position, to go five or six times around the thigh, is now wound very tightly around and above the fixation needles and tied. The Esmarch bandage is now removed and, excepting the small quantity of blood between the limit of the Esmarch bandage below and the constricting tube above, the extremity is bloodless and will so remain.

In several instances surgeons have operated successfully and with satisfactory control of hemorrhage by using only one of the pins as above described—the outer—and by employing assistants to hold the rubber tubing in place. The operation has even been done successfully without the use of pins, but since these, if properly employed, are not at all in the operator's way, and since they render additional assistance unnecessary and assure safety by holding the tourniquet securely in place during the manipulations which are necessary to disarticulate the femur in the critical period of the operation, I hold they are essential in obtaining the best possible results.

In making the flaps no fixed rule can be laid down. The surgeon should always be guided by the conditions within the field of operation. The accepted principle that the danger from shock diminishes in proportion to the distance of the amputation from the trunk should not be overlooked. When done for osteomyelitis or for accident, where the conditions will permit, the soft structures should be divided at the junction of the middle with the upper third. A perpendicular incision commencing above the trochanter and carried down to the bone along the outer aspect of the hip and thigh should join the transverse incision. With the elevator, the muscles should be lifted from the bone or divided with a scissors or bistoury very close to the periosteum. When the capsule is reached this should be divided on its upper aspect, keeping the point of the bistoury always directed toward the center of the neck. The thigh should now be flexed on the abdomen, and after cutting across the capsule posteriorly, forcibly abducted and rotated until the ligamentum teres is ruptured, and the disarticulation completed. The leverage of the undivided femur is of invaluable aid in freeing the head of the bone from the socket. The vessels should now be tied with strong catgut.

In addition to the femoral arteries and veins, the following vessels must be secured: the saphenous vein, which on account of its proximity to the main trunk,

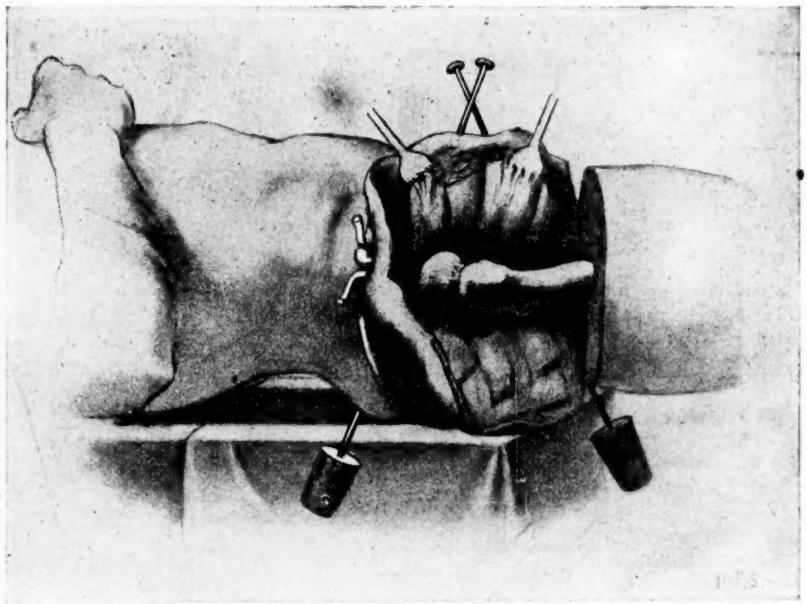

FIG. 278.—The same, showing the soft parts dissected from the bone and the capsule exposed.
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should be tied; the sciatic artery, which will be found near the stump of the sciatic nerve; the obturator, which is situated between the stump of the adductor brevis and magnus, usually about half way from the center of the shaft of the femur to the inner side of the thigh, the vessels being on a level with the anterior surface of the femur; the descending branches of the external circumflex two or three in number, usually found about an inch and a half outward and downward from the main femoral vessels beneath the rectus and in the substance of the crureus and vastus externus. The descending branches of the internal circumflex are insignificant and are usually in the substance of the adductor longus and between it and the adductor brevis and pectineus, only a little below the level of the femoral artery.

It is a wise precaution at this stage of the operation to loosen slowly the grasp of the tourniquet until the pulsation of the larger trunks is perceptible in order to be sure that none of the vessels have been overlooked. To prevent the oozing which is more or less extensive in operations through such large masses of muscular tissue, I introduce a wick of sterile gauze into the cavity of the acetabulum, packing this thoroughly in the space between the muscles from which the bone has been dissected, leaving one end of the wick to pass out between the flaps for the purpose of its removal. In addition to this, with a long half-curved Hagedorn needle, armed with good-sized catgut, deep sutures are then passed through the stumps of the divided muscles, taking three or four inches in the grasp of each suture. In this way large masses of muscle are brought snugly together when these sutures are tied.

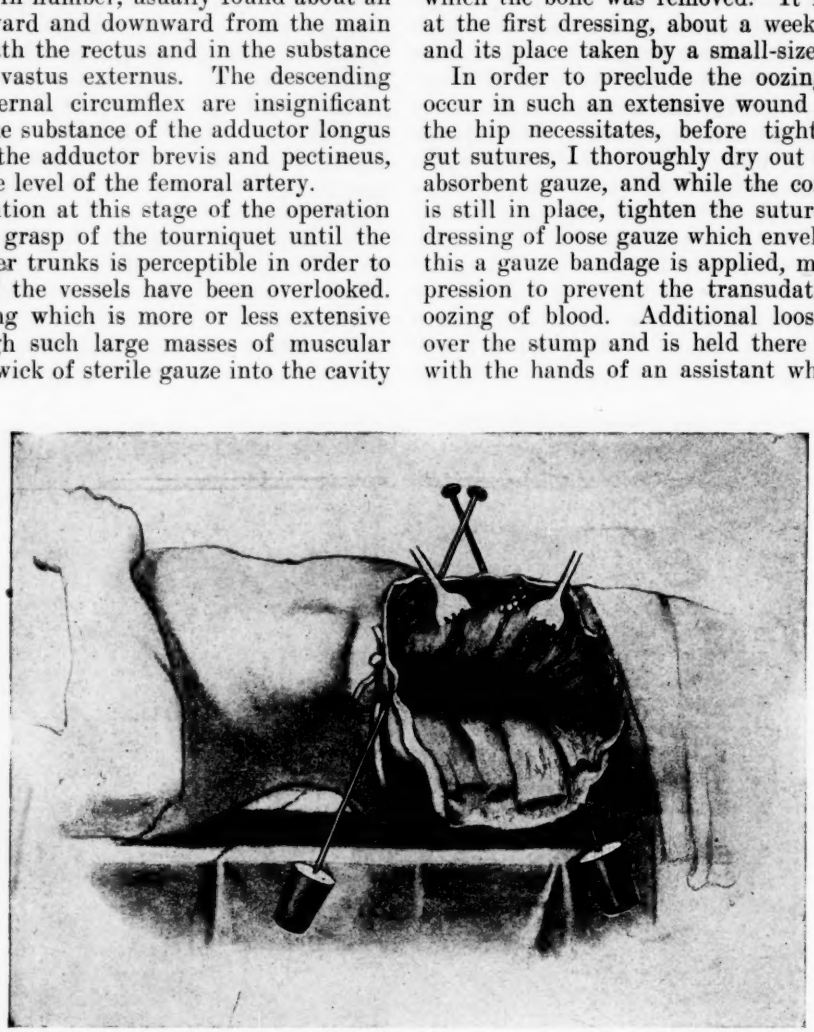

FIG. 279.—The same, with the disarticulation complete. Constrictor still in position.
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This method of forming the flaps and of disarticulating the femur was practically the operation devised by Ravaton in 1743, and was the method employed at Bardstown, Ky., in August, 1806, by Dr. Walter Brashear, the first hip-joint amputation made in the United States.[10]

When, from destruction of the parts by accident or disease, or from the proximity of a neoplasm, this ideal method is not practicable, any modification may be employed, preference being given to the incision which keeps farthest from the tumor and gives the healthiest flaps. When there is scant material to cover the stump, it is even safer to err on the side of an unclosed wound and trust to granulation or grafting for ultimate closing. I employ silkworm gut sutures for uniting the flaps, leaving no drainage excepting the ribbon of sterile gauze which is packed into the acetabulum and the space from which the bone was removed. It is usually withdrawn at the first dressing, about a week after the operation, and its place taken by a small-sized drainage-tube.

In order to preclude the oozing which is likely to occur in such an extensive wound as an amputation at the hip necessitates, before tightening the silkworm gut sutures, I thoroughly dry out the flaps with sterile absorbent gauze, and while the constricting tourniquet is still in place, tighten the sutures and apply a light dressing of loose gauze which envelops the stump. Over this a gauze bandage is applied, making sufficient compression to prevent the transudation of serum or the oozing of blood. Additional loose gauze is now laid over the stump and is held there by firm compression with the hands of an assistant while the tourniquet is loosened, and it, with the pins, removed. A figure-of-eight spica is then thrown over the stump and around the waist, the final turns of which give support to the stump and hold it snugly against the pelvis.

With these precautions I have not been troubled with the oozing which has been complained of by some experienced operators. It is a wise precaution to lower the upper extremity of the patient before removing the tourniquet, as this partial Trendelenburg posture takes off some of the pressure in the arteries at the seat of operation. In fact, in the case of injury where extensive hemorrhage has already occurred, it is better to operate with the patient in this position, even when the intravenous injection of salt solution has been employed.

Method of Digital Compression.—Within recent years two other methods having for their object the control of hemorrhage in amputation at or near the hip-joint have been successfully tried and are recognized by surgeons of reputation and experience. In a paper read at the meeting of the Surgeons of the Pennsylvania

Company, at Pittsburg, in 1888, Dr. J. J. Buchanan suggested the propriety of making an abdominal section under strict antiseptic precautions, and of having an assistant introduce the hand to control, by digital compression, the descending aorta, while the amputation was being made. This suggestion was received with favor by the surgeons then present, and afterward published in "Stemen's Railway Surgery" (1890). As with many other pioneers in surgery, Dr. Buchanan did not have the opportunity of carrying his operation into execution, but Dr. Neal Hardy, of Sandusky, Ohio, who was present at the meeting in Pittsburg, where Dr. Buchanan's paper was read, in November, 1890, applied it with success upon a male patient, 34 years of age. Applying this idea of digital compression within the peritoneal cavity, to the common iliac artery, Dr. Charles McBurney, of New York, has within recent years performed several amputations at the hip-joint, and has commended the procedure.

Method of Gradual Dissection.—Another method worthy of consideration by reason of the distinguished surgeon who commends it, Dr. W. L. Estes, of Bethlehem, Pa., is that of gradual dissection in which the femoral vessels are first exposed, tied and divided between two sets of ligatures. The flaps are then formed as may be indicated, and the soft parts divided as for any operation of the body where a tourniquet can not be employed, all known vessels being secured before they are divided and all others caught with the forceps as soon as severed.

Objections.—There are several serious objections to these methods which I insist do not hold good as compared to the method which I have advised. Compression of the abdominal aorta, as recommended by Dr. Buchanan, of Pittsburg, and practiced by Dr. Neal Hardy, of Sandusky, Ohio, is objectionable in the first place because it interferes very seriously with the general circulation and throws a dangerous volume of blood upon the heart and lungs. In Dr. Hardy's case, he says: "The patient during the operation became cyanotic, but was soon relieved on pressure being removed from the aorta." Again, it necessitates an unnecessary invasion of the peritoneal cavity. This latter criticism will hold good when applied to the method advised by Dr. McBurney. Notwithstanding the too common assertion that opening the abdominal wall and invading the peritoneal cavity under aseptic precautions is not dangerous, and that the gridiron incision carries no risk of hernia with it, I insist and believe the vast majority of surgeons will endorse this position—that we should never enter the abdominal cavity when it can be avoided. Every minute of time unnecessarily lost and every unnecessary traumatism are factors in increasing the danger of shock, and this is the greatest danger in hip-joint amputation. Moreover, compression applied to the common iliac artery for anatomical reasons can not control the circulation in the field of operation as well as the constricting tourniquet when employed with the pins, for the reason that the free anastomosis with branches of the opposite iliac within the pelvis and upon the abdomen must, under the increased arterial pressure, cause the loss of a considerable quantity of blood, especially from the posterior flap.

Results of Author's Method.—The accompanying tables contain 267 cases of amputation at the hip-joint, in which the writer's method of hemostasis was employed. For convenience of study they are classified into three groups: 1, neoplasms, including sarcoma, carcinoma, epithelioma and one case of elephantiasis and probably one osteoma; 2, septic infections, including pyogenic ostitis or osteomyelitis, tuberculous ostitis or osteoarthritis, gangrene, cellulitis and ulcer; 3, injuries, with or without pyogenic infection.

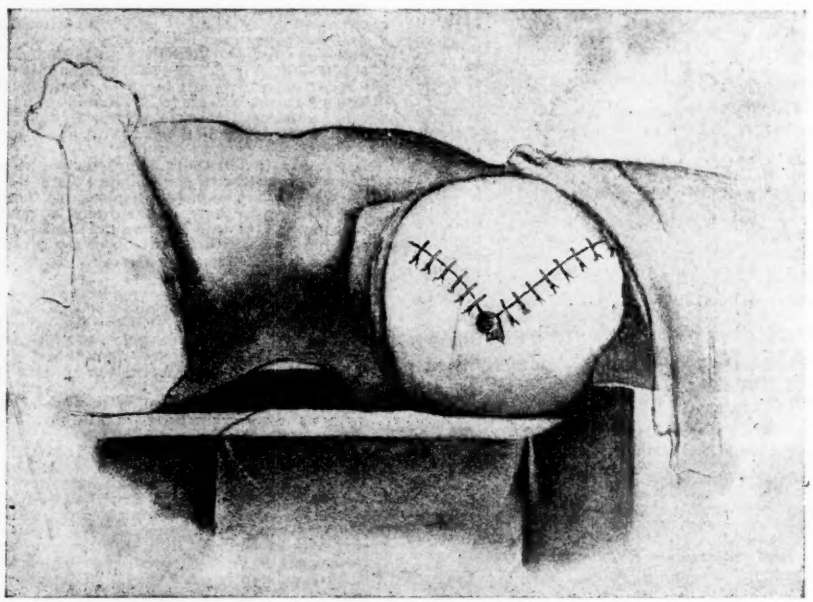

FIG. 280.—The operation completed
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In the group of amputations at the hip for neoplasms, all of which were malignant in character—with the exception of one case of elephantiasis and one of osteoma—there were 131 cases of sarcoma, 5 of epithelioma of the soft parts, and one reported as osteocarcinoma. None died in this group, excepting 14 fatal cases of the subdivision of sarcoma, giving the rate of mortality in disarticulation at the hip for sarcoma as 10.6 per cent., while for the whole group of 137 cases, the death-rate was 10.2 per cent. Of the fatal cases 1 was complicated with gangrene for two weeks before the operation, and had a rectal temperature of 104 at the time of amputation, and died of shock twenty-four hours

MALIGNANT NEOPLASMS; SARCOMA, CARCINOMA, EPITHELIOMA.

No.	Operator.	Date, Sex, Age.	Cause of Operation.	Result.	Remarks.
1	J. A. Wyeth	1890 M. 39	Osteosarcoma, middle lower third of femur.	Recover'd	Femur first divided at level of lesser trochanter. Sixteen days later head and neck of bone enucleated.
2	" "	1890 " 34	Neurosarcoma	"	Tumor of internal popliteal nerve was extirpated but recurred. Amputation at lower third of thigh; recurred and amputation at hip.
3	" "	1892 F. 17	Osteosarcoma.	"	Amputation through lower third of femur had been done by Dr. Allen of Cleveland, Ohio. Recurred in stump. Died six months after operation from recurrence in abdominal viscera. No pulmonary symptoms.
4	" "	1894 M. 19	Osteosarcoma.	Died	Rallied well from operation; twenty-six hours later pulse suddenly rapid and weak. Injection of two pints warm saline solution. Death forty hours after operation. Ether was the anesthetic. No renal or other lesions. Wound not septic.
5	" "	1895 " 20	Osteosarcoma.	Recover'd	Died one year after operation from "rapid pneumonia." Probably recurrence of sarcoma in lungs.
6	" "	1898 " 34	Sarcoma	"	Large sarcoma attached to trochanteric region of femur and infiltrating the soft tissues as high as the obturator foramen. This cavity was curetted in order to remove all suspicious tissues. The anterior incision was close to the tourniquet to get above the neoplasm. No recurrence two and one-half years after operation.
7	J. A. Wyeth and J. A. Bodine.	1895 " 18	Osteosarcoma.	"	No subsequent history.
8	A. M. Phelps	1891 " 55	"	"	No recurrence in 1898.
9	" "	1895 " 16	"	"	No recurrence in 1898 when patient was last heard from.
10	Emory Lanphear	1892 F 28	Osteoma of femur	"	
11	" "	1898 M. 19	Osteosarcoma.	"	
12	H. O. Walker	1892 " 19	"	"	"We have in this a safe and reliable method for controlling hemorrhage, which, in my judgment, is superior to any yet offered"
13	C. B. Nancrede	1892 " 32	"	"	Recurrence in stump and death six months after operation.
14	" "	1894 " 35	Sarcoma.	"	Recurrence in stump and death within a year after operation.
15	" "	1894 F. 16	"	"	No recurrence two years after operation; no subsequent history.
16	" "	1895 M. 30	"	"	Recurred in lung and brain sixteen months after operation.
17	" "	1897 F. 16	"	"	Recurred in stump and general metastasis in nine months.
18	William F. Fluhrer	1890 " 18	Osteosarcoma of femur.	"	Spontaneous fracture at middle of thigh, April 26, 1890. "As little blood was lost as in an ordinary amputation at the middle of the thigh." Recurrence in stump in about six months and death.
19	Charles McBurney	1890 M. 34	"	"	"No other appliance that has been suggested for the purpose could in any way compare in utility with that of Dr. Wyeth." No recurrence three months later. No subsequent history.
20	Frank Hartley	1892 F. 26	"	"	No recurrence two years later. No subsequent history.
21	Merrill Ricketts	1893 " 23	"	"	"The operation was entirely bloodless." Died eighteen months; recurrence at sacro-iliac synchondrosis.
22	" "	1894 M 27	" lower end of femur.	Died	Death in ten hours in shock. Very little blood lost.
23	C. A. White	1891 " 23	Osteosarcoma.	Recover'd	Patient was up and about after the operation, but on the twenty-seventh day was seized with pneumonia and died five days later.
24	W. W. Keen	1892 F. 30	"	"	Patient was five months pregnant at time of operation. "It was reserved for an American surgeon to devise what is undoubtedly the best method, and, in fact, what I think we can now call the only method of hemostasis in amputation at the hip-joint." Died in three or four years from recurrence in viscera. No mention of involvement of lungs.
25	M. J. Ahern	1892 M. 22	"	"	
26	J. B. Murdock	1892 " 17	"	Died	Death from shock twenty-two hours after operation. "I believe this method to be the best and the one destined to supercede all other methods for temporary arrest of hemorrhage."
27	J. McFadden Gaston	1890 "	"	Recover'd	Death on the twenty-sixth day from septicemia. "There was absolutely no trouble from hemorrhage, and I feel satisfied that with this process all bleeding may be prevented in amputation at the hip-joint."
28	A. J. McCosh	1892 " 27	"	"	
29	F. W. Parham	1893 " 3	"	"	Not having the surgical pins in this child large glass-headed lady's hat pins were successfully substituted. Died from recurrence in lungs six months after operation.
30	" "	1899 F. 5m	Myxosarcoma of left knee.	"	"The tumor seems to have existed at birth and had grown rapidly during the preceding weeks Fourteen months later child well.
31	J. M. Holloway	1892 M. 27	Osteosarcoma.	"	Patient was discharged from hospital on the tenth and went to his home, a distance of seventy miles, on the twelfth day.
32	R. T. Morris	1894 " 19	"Tumor" of thigh.	Died	Died eleven days after operation from tubercular peritonitis. Cause of death proved by autopsy. "While making the skin incisions, it was noticed that the limb was not completely exsanguinated, and the tourniquet was retightened, after which no bleeding resulted."
33	H. H. Vinke	1894 F. 16	Sarcoma of thigh.	Recover'd	Used crutches in seven weeks. "Absolutely no loss of blood. There is probably no method which commends itself for simplicity and effectiveness so much as Wyeth's." Recurrence in two years in stump and mesenteric glands. Death.
34	J. S. Horsley	1894 M. 36	Recurring sarcoma of fascia of thigh	"	"No more blood was lost than in an amputation through the thigh. It remained for Dr. Wyeth to so perfect this method as to make this amputation practically a bloodless operation" Died in fourteen months from recurrence in lungs.
35	George W. Miel	1894 " 41	Osteosarcoma of thigh	"	"A very satisfactory means of controlling hemorrhage." Died in eight months from recurrence in lung. No recurrence in stump. Lancinating pains in chest at time of operation.
36	F. Tilden Brown	1894 " 22	Round-cell osteosarcoma involving triceps femoris.	"	"Hemostatic effect all that could be desired." Died within a year from recurrence in lungs.
37	Robert Weir	1895 "	Sarcoma of femur.	"	No recurrence up to February, 1898.
38	F. W. Murray	1894 " 18	" "	"	Pins were by mistake made too small; they bent; caused hemorrhage. Died from recurrence in lungs about four years after operation.
39	W. T. Bull	1895 F. 5	Osteosarcoma of femur	"	Primary union; time of operation, 40 minutes. Died in seven months from recurrence in abdominal viscera.
40	Thomas R. Wright	1895 M.	Sarcoma of knee	"	Died in eighteen months from recurrence in right lung.
41	" "	1896 " 50	" "	"	Lost comparatively no blood Temp. 103 F. and pulse 120 before operation. Died in six months from apoplexy. Negro
42	H. H. Grant	F. 33	Chondroma with sarcomatous degeneration.	"	Enormous chondroma with sarcomatous degeneration; tumor weighed 65 pounds; operation lasted thirty-five minutes; bloodless except for oozing "Method leaves nothing to be desired." No subsequent history.
43	" "	1899 M. 43	Sarcoma of knee	"	Died fourteen months after operation from recurrence in lymphatics of parts above Poupart's ligament.
44	W. R. Stewart	1895 " 35	Sarcoma.	"	Was well November 19, 1896.
45	Eugene Boise	1895 F. 21	"	"	No loss of blood. Vessels nearly all tied before tubing was removed. "Method of amputation is all that could be desired." Disease recurred very early in lungs.
46	L. L. Shropshire	1895 M 20	Sarcoma, lower middle of left thigh.	"	Operation done in 30 minutes. Not over one ounce blood lost. Patient left hospital in two weeks; living and well February, 1901.
47	Howard Lilienthal	1896 " 16	Chondrosarcoma, from trochanter down.	"	"Method was employed to my great satisfaction."
48	J. D. Rushmore	1896 F. 14	Sarcoma of femur	"	
49	R. Matas	1896 M 49	Sarcoma	"	No recognizable recurrence when last heard from, eighteen months after operation, but he was reported as developing "consumption," and very probably this was a metastatic process in the lung.
50	W. D. Hamilton	1895 F. 48	"	Died	Neoplasm involved knee and lower end of femur. Died from shock in 5 hr.
51	" "	1899 M. 56	"	Recover'd	Tumor of thigh. No recurrence February, 1901.
52	" "	1900 F. 16	"	"	" " " " " "

MALIGNANT NEOPLASMS; SARCOMA, CARCINOMA, EPITHELIOMA.—(*Continued.*)

No.	Operator.	Date, Sex, Age.	Cause of Operation.	Result.	Remarks.
53	Charles S. Hamilton	1899 F. 32	Sarcoma	Recover'd	No recurrence in March, 1901—two years. Patient has borne a healthy child since operation.
54	Wm. H. Noble	1896 M. 21	Osteosarcoma of head of tibia.	Died	"Operation completed—patient in bed in forty-eight minutes. Died in collapse four hours later. Operation was absolutely bloodless, but the oozing afterward from the capillary vessels was very great, certainly half a pint, if not more, being lost."
55	W. B. Van Lennep	1894 F.	Sarcoma	Recover'd	
56	" "	1895 " 24	"	"	Died two years later with what was reported to Dr. L. as "acute lung trouble," or metastasis in lung. "Thorough occlusion of every vessel below the hip."
57	" "	1896 M. 56	Epithelioma	"	
58	M. Banby, Toulouse, France.	1897 " 37	Sarcoma	"	"No hemorrhage, no shock, no fever." (Association Francaise de Chirurgie, 1897.) Recurred in stump one month after leaving hospital.
59	L. L. Hill	1893 " 35	Osteosarcoma	"	Tumor measured forty-four inches in circumference.
60	Thos. F. Chavasse	1896 F. 39	Endosteal sarcoma	Died	Neoplasm involved lower third of femur, where fracture had occurred six months previously. Death from shock in ten hours.
61	" "	1896 " 29	" "	Recover'd	Intravenous injection of fifteen ounces of saline fluid. Patient was six months pregnant. Dead fetus aborted one month after operation. Died thirteen months later from recurrence in left lung. Stump not affected.
62	" "	1899 M. 56	Periosteal Sarcoma	"	Neoplasm of lower third of femur, where fracture occurred three days before amputation. Soft parts infiltered high up, necessitating division of muscles at level of acetabulum. One pint saline fluid. Died in eleven months from recurrence in both lungs. The stump was unaffected.
63	" "	1899 F. 23	Endosteal sarcoma	"	Neoplasm infiltrated head of tibia, right knee-joint and belly of semi-membranous muscle. Eight months pregnant. Premature labor ten days before operation. Died in twelve months from recurrence in both lungs. Stump was not affected.
64	L. M. Tiffany	1900 " 16	Osteosarcoma	"	
65	W. H. Gilbert	1899 M. 42	Carcinoma of shaft of femur	"	
66	John B. Deaver	1899 F. 24	Sarcoma of femur	"	
67	Robert G. Le Conte	1900 M. 18	Osteosarcoma, left femur	"	Time of operation thirty minutes. Recurrence in stump and death about six months after operation.
68	Jas. G. Garrard	1897 " 37	Epithelioma of lower half of left thigh.	"	Extensive burn of this extremity. About twenty years later epithelioma developed in cicatrix. Negro.
69	George Heaton, Birmingham, England.*	1896 F. 29	Periosteal sarcoma	"	Living two years later. Very little shock in either of Mr. Heaton's cases.
70	George Heaton	1898 M. 17	Round-celled sarcoma of muscles.	"	Left semi-membranosus muscle. Died in fourteen months from recurrence of growth in stump.
71	J. F. Binnie	1898 " 32	Sarcoma of femur	"	Died several months after operation from recurrence.
72	W. E. Parker	1895 " 23	Osteosarcoma of femur	"	Living at last report, six months after operation.
73	E. D. Martin, New Orleans.	1895 F. 35	Sarcoma of knee	"	Six months later died with recurrence in stump.
74	E. D. Martin	1896 " 40	Sarcoma of femur	"	Both operations practically bloodless. No shock. No further history.
75	J. M. Maury	M. 54	Sarcoma	"	Neoplasm followed ten years after gunshot wound of femur and was situated near the knee. Suspicious signs in stump when patient left hospital. No subsequent history.
76	Wm. B. Coley	1897 F. 11	Periosteal sarcoma of femur	"	Hemorrhage completely controlled. Rubber tubing left on until vessels had been tied, then slowly released, thus reducing the loss of blood to a mere trifle. No further history.
77	" "	1898 M. 6	" " "	"	Died in six months from recurrence in lungs and abdomen.
78	" "	1898 F. 13	Chondrosarcoma of femur	"	Died from recurrence in two years. Location of metastasis not given.
79	" "	1898 M. 49	Sarcoma of thigh (soft parts)	"	Died from recurrence in stump and iliac fossa eighteen months later.
80	" "	1899 F. 24	Sarcoma of thigh, fascia and muscles.	"	No recurrence January, 1901, about eighteen months.
81	" "	1900 M. 45	Osteosarcoma of femur following fracture.	"	Disarticulation completed in six minutes. No recurrence January, 1901, six months after operation.
82	R. W. Stewart	1895 . 35	Sarcoma, lower end of femur	"	No recurrence after two years.
83	" "	1900 47	" " "	"	Less than an ounce of blood lost in either of these cases.
84	G. K. Dickinson	1894 F. 50	Sarcoma of thigh	Died	Gangrene commenced two weeks before operation. Rectal temperature was 104. Died in twenty-four hours.
85	W. C. Dugan	1894 M. 40	Osteosarcoma of condyle of femur.	Recover'd	Operation lasted thirty-five minutes. No recurrence in seven years.
86	" "	1898 " 17	Osteosarcoma of shaft.	"	To facilitate disarticulation "the thigh was flexed on abdomen and adducted while the capsular ligament was cut on the posterior inferior portion." Died from recurrence in abdominal viscera (glands and liver) in eighteen months.
87	B. F. Curtis	1898 " 50	Recurrent sarcoma	"	Neoplasm recurred after local extirpation. Disease not in stump. Death in few months.
88	Leonard Freeman	1896 " 49	Central osteosarcoma of lower third of left femur.	"	Spontaneous fracture while turning over in bed a few days before operation, Sept. 20, 1896. Rectal injection hot salt solution before operation. No recurrence in July, 1900.
89	D. C. Hawley	1896 " 21	Osteosarcoma, femur	"	No recurrence in 1900. Spontaneous fracture before operation.
90	J. H. Oliver	1900 " 45	Epithelioma of anterior and outer surface of thigh, involving shaft of bone.	"	Died two months later from recurrence.
91	J. J. Clausen	1894 " 22	Periosteal sarcoma, l. femur	"	No subsequent history obtainable. Negro.
92	Carl Beck	1896 " 54	Osteosarcoma, right femur	"	Died two years later. Recurrence in pleura or lung.
93	H. A. Sifton	1895 F. 39	Sarcoma	"	Died one year later with recurrence; location of recurrence not stated.
94	M. B. Herman	M. 24	"	"	No recurrence in eight months; no later history obtainable.
95	C. B. Schoolfield	1895 F. 65	Sarcoma, lower end of femur	"	Tumor measured twenty-six inches in circumference.
96	Hunter P. Cooper	1897 M. 30	Osteosarcoma of femur	"	Living and well two years later.
97	" "	1899 " 40	Large epithelioma of skin of thigh.	"	Inguinal glands removed.
98	W. S. Elkin	1894 " 14	Osteosarcoma of femur	"	"The simplest and safest method at our command." Recurred in liver eighteen months after operation.
99	George R. Fowler	1893 " 15	Sarcoma of lower end of femur.	"	Sail-maker's needles were used in absence of the steel pins. A Jordan Lloyd figure-of-8 was added for security. During the operation one of the needles gave way under pressure of the constricting rubber-tube, necessitating the tightening of the figure-of-8 bandage. Died in eighteen months from recurrence in lungs.
100	" "	1899 F. 20	Sarcoma of femur	"	Died eighteen months later from recurrence in viscera.
101	R. H. Whitehead	1895 M. 16 months	Sarcoma of femur	Died	No bleeding. Died on night following operation. Cause not known.
102	Wm. D. Hilliard	1898 F. 44	Osteosarcoma of left thigh	"	Unfortunately patient had severe hemorrhage just before she was brought into the operating room and was considered almost hopeless from any standpoint. Amputation perfectly bloodless. Died in short time; shock.
103	Ernest Laplace	1900 M. 26	Sarcoma of knee	Recover'd	Patient extremely weak at time of operation. About 2 oz. of blood lost.
104	J. J. Buchanan	1899 " 13	Sarcoma of femur	"	No blood lost. Death from recurrence in lungs six months later.
105	" "	1899 " 35	Epithelioma	"	Epithelioma developed in discharging sinuses of old osteomyelitis. Thigh amputated at middle. Malignant disease returned aud disarticulation of hip performed.
106	Floyd W. McRae	1899 " 13	Osteosarcoma of right femur	"	Method bloodless, tube drainage, catgut sutures in stump of divided muscles, silkworm-gut sutures for flaps. Recovery uneventful. Recurred fatally in eleven months in the liver.
107	" "	1899 " 17	" left "	"	Recurred in left pleura near the pericardium within a year of operation.
108	W. B. Rogers	1899 F. 37	" femur	Died	There was no loss of blood, no shock or sepsis. Died from asphyxia on twelfth day. No postmortem. The symptoms pointed to rapid infiltration of the air-cells with metastatic products.

* See a third by Mr. Heaton at end of tables.

MALIGNANT NEOPLASMS; SARCOMA, CARCINOMA, EPITHELIOMA.—(*Concluded.*)

No.	Operator.	Date, Age, Sex.	Cause of Operation.	Result.	Remarks.
109	W. B. Rogers	1899 F. 31	Sarcoma of thigh	Recover'd	Primary amputation for sarcoma of leg. Disarticulation at hip on account of recurrence. No subsequent history.
110	Harry M. Sherman	1891 " 14	Myelosarcoma, neck of femur	"	Patient living and without recurrence Sept. 24, 1900.
111	" "	1896 M. 41	Spindle-cell sarcoma, thigh	"	Death from recurrence in lungs fifteen months later.
112	" "	1897 " 29	Giant-cell sarcoma, neck and head of femur.	Died	Sarcoma also involved the acetabulum. This was curetted. Death in four hours.
113	" "	1897 F. 17	Small round-cell sarcoma of thigh.	Recover'd	The skin holding the pins began to tear as the disarticulation was finished. Operator made direct compression of femoral artery and completed the operation successfully. Died from recurrence in lung three months later.
114	" "	1900 M. 8	Sarcoma of tibia and femur involving knee-joint.	"	Recurred within one year in scalp, orbit and elsewhere.
115	Charles K. Briddon	1894 " 18	Sarcoma of femur	"	So little blood was lost that the patient suffered scarcely at all from shock. Recurred fatally one year later in the abdominal glands and viscera of abdomen and lungs.
116	" "	1897 " 15	Sarcoma of femur, high up	"	No subsequent history.
117	" "	1898 F. 35	Sarcoma of thigh	"	No recurrence in March, 1901, about two and one-half years after operation.
118	" "	1899 M. 30	" "	"	No recurrence two years after operation (March, 1901).
119	" "	1900 " 23	" "	"	
120	E. W. Holmes	1895 F. 10	Osteosarcoma of femur	"	Died from recurrence eleven months later.
121	" "	1899 M. 23	" "	"	Still living and well.
122	" "	1899 F. 22	" "	"	Died four months later from recurrence in lungs.
123	Jacob Geiger	1897 M. 13	" "	"	Tumor weighed 29lb. Died nine months later from recurrence in lungs.
124	John B. Walker	F. 19	Myeloid sarcoma of thigh	"	
125	Wm. Jones	1891 M. 35	" femur	"	
126	F. A. Dunsmoor	1897 M. 25	Sarcoma, lower third, r femur	"	No recurrence at this date, three years after operation.
127	" "	1897 F. 50	Sarcoma of upper third of femur.	"	Patient recovered from operation. Died from general exhaustion thirty days later.
128	A. C. Bernays	1896 " 3	Sarcoma of femur. Soft, rapid growth.	Died	Shock.
129	" "	1898 M. 18	Sarcoma of thigh	Recover'd	Died twenty months later from recurrence in lungs.
130	" "	1900 F. 16	Elephantiasis	"	
131	" "	1895 " 17	Periosteal sarcoma of femur	"	Patient in good health in 1900.
132	J. D. Griffith	1897 M. 21	Sarcoma of femur	"	Tumor of enormous proportions (shown in accompanying cut). Patient living and well in March, 1901, nearly four years after operation.
133	" "	1898 5	" "	"	No recurrence in two and one-half years after operation.
134	" "	1898 9	" "	"	" " " " " " "
135	J. H. Oliver	1900 F. 49	Spindle-cell sarcoma, lower fourth of femur.	"	Hemorrhage under absolute control.
136	George Heaton	1900 M. 17	Mixed round and spindle-cell sarcoma of left femur.	"	
137	" "	1901 " 35	Vascular osteosarcoma of middle of femur.	"	

SEPTIC INFECTION; OSTITIS, ARTHRITIS, OSTEO-ARTHRITIS, TUBERCULOSIS, GANGRENE, CELLULITIS, ULCER.

No.	Operator.	Date Sex, Age.	Cause of Operation.	Result.	Remarks.
1	J. A Wyeth	1892 M. 28	Tuberculous osteo-arthritis of femur and acetabulum.	Recover'd	Extensive infiltration and burrowing of pus sinus. Anchylosis of end of femur to the diseased acetabulum, necessitating the chisel to detach it.
2	Samuel H. Pinkerton	1892 M. 17	Tuberculous osteo-arthritis of femur	"	
3	" " "	1892 M. 10	Tuberculous osteo-arthritis of femur.	"	
4	" " "	1892 M. 42	Extensive necrosis of femur; ostitis.	"	
5	" " "	1892 M. 43	Extensive necrosis of femur; ostitis.	Died	Death twelve hours after operation from shock; no hemorrhage.
6	" " "	1892 M. 17	Ostitis of femur	Recover'd	
7	A. M. Phelps	1891 M.	Long-standing, destructive osteo-arthritis.	"	
8	" "	1892 M.	Osteomyelitis of entire femur.	Died	Death from exhaustion 12 hours after operation; condition of patient so bad that operation contra-advised, but performed at earnest request of parents.
9	" "	M, 11	Osteomyelitis	Recover'd	
10	" "	1899 F. 18	Tuberculous osteo-arthritis	"	Patient almost moribund from prolonged sepsis at time of operation.
11	Emory Lanphear	1890 M. 9	Osteomyelitis of femur	"	"Wyeth's bloodless method, by which failure to control hemorrhage seems to me to be impossible."
12	" "	1892 M. 15	Osteomyelitis of femur	"	
13	" "	1893 M. 28	Osteomyelitis of femur	"	
14	" "	1897 F. 27	Osteomyelitis	"	
15	H. O. Walker	1893 M. 21	Osteo-arthritis	"	
16	" "	1893 M.	Osteo-arthritis	Died	Death from exhaustion in four hours; no hemorrhage.
17	John B. Deaver	1893 M. 20	Osteomyelitis of femur	Recover'd	
18	J. Ewing Mears	1892 M. 10	Osteo-arthritis of hip	"	
19	A. E. Mallock	1892 M. 30	Osteo-arthritis of hip	"	Operation lasted thirty-five minutes.
20	R. L. Swan	1893 F. 19	Osteo-arthritis of hip	"	
21	C. B. Nancrede	1898 M. 50	Osteomyelitis of femur; suppurating arthritis.	Died	Patient had had a compound fracture which became infected and had suppurated with varying profusion for thirty years. He did well after the operation, but on tenth day quite suddenly developed symptoms of cerebral apoplexy and died in coma
22	" "	1893 M. 31	Osteomyelitis of femur	Recover'd	
23	John B. Deaver	1890 F. 20	Chronic osteo-arthritis	"	
24	S. B. Fowler	1890 M. 54	Traumatic osteitis of femur; bed-ridden for fifteen years.	"	Recovery without suppuration; no hemorrhage; patient now living (1896).
25	W. W. Van Arsdale	1896 M. 13	Osteomyelitis	"	Destruction of soft parts of thigh with suppuration; patient was extremely septic.
26	F. W. Parkham	1895 M. 29	Osteomyelitis of entire femur	"	Amputation through upper third; two weeks later amputation at hip.
27	Charles K. Briddon	1897 M. 33	Tuberculous osteo-arthritis	"	
28	Charles S. Hamilton	1899 M. 14	Tuberculous ostitis	"	Casts and albumen in urine. Greatly exhausted from prolonged sepsis.
29	Wm. H. Noble	1897 M. 26	Osteomyelitis	"	Traumatic osteo-arthritis of knee and myelitis of femur necessitated amputation at middle of thigh, later above this, and finally at hip.
30	" " "	1897 M. 29	" "	"	Operation lasted thirty-two minutes.
31	W. B. Van Lennep	1896 M. 14	General septic infection of left leg and thigh.	"	
32	L. L. Hill	1893 M. 60	Osteomyelitis	"	Gunshot wound of right knee in the Civil War. Immediate amp. at knee.
33	Chas. G. Levison	1899 M. 40	Tuberculous osteo-arthritis	"	
34	" " "	1899 M. 23	" " "	"	Myelitis extended through the entire length of the femur.
35	T. P. Webster	1899 M. 40	" " "	"	Acute pyogenic infection following tubercular osteo-arthritis. Patient much exhausted by prolonged sepsis. Transfused about three quarts normal salt solution during operation.

SEPTIC INFECTIONS, OSTEITIS, ARTHRITIS, OSTEO ARTHRITIS, TUBERCULOSIS, GANGRENE, CELLULITIS, ULCER.—*Continued.*

No.	Operator.	Date, Sex, Age.	Cause of Operation	Result.	Remarks.
36	Thos F. Chavasse* (England.)	1897 F. 14	Osteo-arthritis.	Died.	Death from exhaustion on fourth day. Intravenous injection of half a pint of saline fluid.
37	" " "	1897 F. 24	" "	Recover'd	Syme's amputation for osteitis in 1895; one year later amputation at knee; six months later at hip.
38	" " "	1899 F. 26	Tuberculous osteo-arthritis of left knee-joint; septic infiltration of thigh.	"	Same patient. Pint of saline fluid injected.
39	" " "	1899 F. 8	Tuberculous osteo-arthritis.	"	Excision of head of femur two years before. Half a pint of saline fluid injected. Amyloid degeneration of liver and kidneys.
40	" " "	1900 M. 23	" " "	"	Head of left femur excised Feb. 13, 1899.
41	G. F. Shears.	1896 M. 26	Osteo-arthritis with general septic infiltration.	"	"The very great mortality could be materially reduced by the general adoption of this method."
42	Horace Packard.	1897 M. 30	Osteomyelitis.	"	
43	G. K. Dickinson	1899 M. 33	Gangrene of right thigh	"	Four months later gangrene occurred in left leg. Gangrene caused by thrombosis and phlebitis. Condition desperate.
44	" "	1900 F. 65	Gangrene.	Died.	Preliminary amputation above knee, but as the muscles here were necrotic, disarticulation at hip was done. Died from exhaustion and shock in five hours.
45	H. H. Grant.	1900 F. 28	Osteitis, right femur.	Recover'd	Amputation in lower third two years before. Hip was anchylosed.
46	R. H. M. Dawbarn.	1895 F. 30	Osteomyelitis.	"	
47	" "	1898 F. 10	Tuberculous osteo-arthritis	"	Died one year later with pulmonary tuberculosis.
48	L. S. Pilcher.	1900 M. 30	" " "	"	Perfect control of circulation.
49	George P. Jessup	1898 M. 30	Osteo-myelitis of femur	"	
50	J. William White	1896 M. 14	Total necrosis of femur.	"	
51	" "	1896 M. 14	Total necrosis of femur, with pathological fract. of thigh	Died.	There was extensive necrosis of right humerus and shoulder joint. Patient greatly exhausted by prolonged suppuration and sepsis. Died 7th day.
52	" "	F. 6	Destructive osteitis of femur	Recover'd	Upper third of bone almost entirely destroyed; neck fractured during disarticulation. No difficulty in removing head of bone.
53	Lewis C. Bosher.	1897 M. 7	Osteomyelitis, right femur.	"	Spontaneous fracture before operation.
54	" "	1899 F. 9	" left femur.	"	
55	Manning Simons.	M. 30	Gangrene.	Died.	Patient at time of operation was exhausted by prolonged general septicemia. The gangrene was caused by occlusion of the femoral vessels.
56	" "	M. 18	"	"	Aneurysm five inches in diameter involving external iliac and femoral arteries. Extensive hemorrhage occurred from the diseased vessels after the tourniquet was removed. Died from hemorrhage and shock.
57	" "	1899 F. 35	Osteomyelitis.	"	Died three days after operation from exhaustion and chronic septicemia.
58	George E. Brewer.	1898 M. 56	General septic cellulitis, with destruction of soft parts.	"	Patient extremely septic at operation, which was followed by temporary improvement. Secondary infection of flaps ensued, necessitating revision, which ended fatally.
59	" "	1898 M. 50	Diabetic gangrene.	"	Wound healed quickly. Patient died suddenly at end of second week. Supposed apoplexy.
60	" "	1899 M. 45	" "	Recover'd	
61	" "	1899 M. 40	Osteomyelitis.	"	
62	E. F. Robinson, U.S.A., Philippine Islands.	1900 M. 29	Gangrene.	"	Gangrene caused by deligation of external iliac artery on account of aneurysm. Collateral circulation was so complete that tourniquet had to be employed.
63	Wm. Perrin Nicolson.	1896 M. 35	Large ulcer in cicatrix of burn.	"	Extensive ulcer of right thigh, caused by burn in youth, undergoing seeming malignant change.
64	M. B. Herman.	" M. 20	Gangrene.	"	
65	" "	" M. 30	"	Died.	Recovered from operation. Died from pneumonia one week later.
66	" "	" M. 35	Tuberculous osteitis.	Recover'd	
67	" "	" M. 40	Extensive septic infection of thigh (cellulitis).	"	
68	Hunter P. Cooper.	1894 M. 16	Osteomyelitis of femur.	"	Whole shaft of femur destroyed. Highest temp. after operation 99.5° F.
69	" "	1897 F. 13	" "	"	"Operation at college clinic. Patient removed in ambulance immediately to her home. This method marks an epoch in modern surgery."
70	Wm. D. Hilliard.	1898 M. 60	" "	"	Osteo-myelitis of thirty-five years' duration from gunshot wound at Gettysburg, 1863. Perfectly bloodless.
71	W. B. Rogers	1895 F. 16	Osteo-arthritis of hip-joint	"	
72	" "	1895 M. 38	Rapidly developing gangrene	Died.	Died 40 hr. after operation from general septic infect'n prior to amputat'n.
73	Harry M. Sherman†	1895 M. 7	Tuberculous osteo-arthritis	Recover'd	
74	" "	1897 M. 14	" " "	"	
75	" "	1897 F. 8	" " "	"	
76	" "	1898 M. 10	" " "	"	
77	" "	1898 F. 13	" " "	Died.	
78	" "	1898 F. 19	" " "	"	
79	S. T. Hunkin	1898 M. 6	" " "	Recover'd	
80	Charles K Briddon.	1897 M. 33	" " "	"	No bleeding from upper tissues.
81	Tilman Ramsey	1900 M. 34	Osteomyelitis of femur.	"	
82	George F. Wilson	1898 M. 11	" " "	"	Epiphysis and joints also involved (not tubercular).
83	" "	1898 M. 15	" " "	"	
84	" "	1899 F. 21	Gangrene of extremity.	"	
85	Wm. Jones.	1894 M. 65	Tuberculous osteo-arthritis of hip.	"	
86	Charles H. Frazier	1900 M. 21	Tuberculous osteomyelitis (with arthritis?).	"	
87	Andrew C. Smith	1895 M. 68	Osteitis of femur.	"	
88	J. D. S. Davis	1897 F. 13	Tuberculous osteomyelitis of femur.	"	The entire upper half of femur and the acetabulum were involved. The diseased surfaces of the cotyloid cavity were removed. Cured.
89	" "	1898 M. 11	Tuberculous osteitis of head of femur.	"	
90	A. C. Bernays	1894 M. 39	Tuberculosis of femur, hip and knee joints.	"	
91	Edwin Walker.	1900 M. 15	Chronic osteomyelitis of femur.	"	Patient much exhausted by sepsis of two years' duration. Not exceeding two ounces of blood were lost.
92	Thomas F. Chavasse.	1898 F. 23	Extensive ulcer of thigh with infantile paralysis.	"	Amputation at knee three years. One pint salt solution in vein at time of operation.
93	" " "	1901 M. 29	Gangrene from traum. aneurysm of right femoral artery.	"	One pint salt solution before operation.
94	Harry M. Sherman	1900 M.	Tuberculous osteo-arthritis of hip.	"	

* See two additional cases by Mr. Chavasse at end of tables. † See additional case by Dr. Sherman at end of tables.

later. The second had a severe hemorrhage immediately before the operation, from breaking down of the neoplasm, and was practically hopeless when it was undertaken. A third recovered from the operation and died from tubercular peritonitis, on the eleventh day, while in a fourth case, after a good recovery from the operation, the stump became infected and the patient died from septicemia, on the twenty-sixth day. In a fifth the neoplasm involved the acetabulum and the pelvis, which necessitated curettage of an extensive region, death following from shock, within four hours. In a sixth case there was no shock nor hemorrhage; the patient died suddenly, from asphyxia, twelve days after the operation; no post-mortem was made, and the cause of death was unknown. The other 8 died in shock from four to twenty-six hours after the operation.

INJURIES WITH OR WITHOUT PYOGENIC INFECTION.

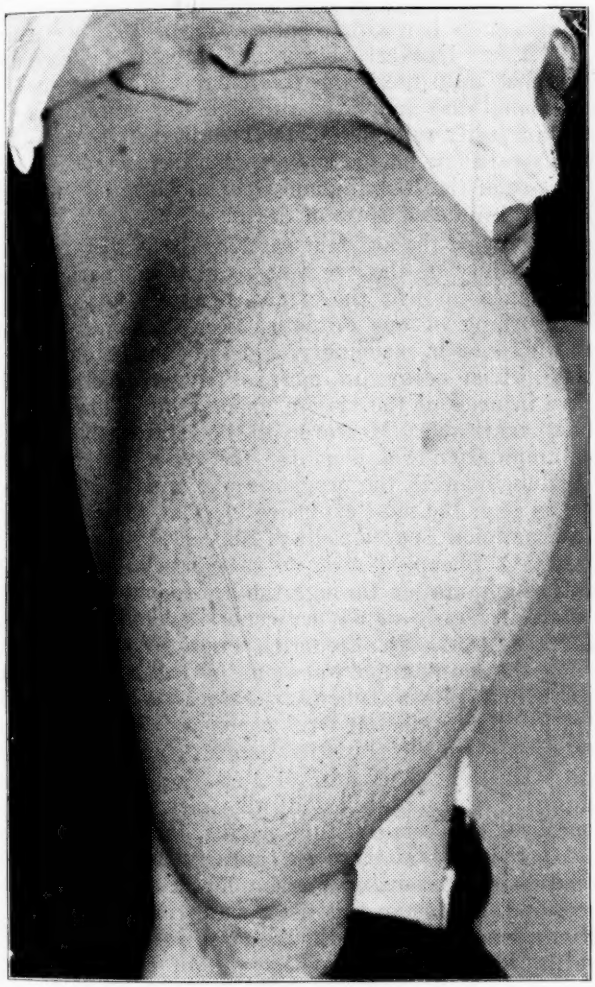
No.	Operator.	Date. Sex, Age.	Cause of Operation.	Result.	Remarks.
1	Samuel H. Pinkerton.	1892 M. 6	Compound, comminuted, gunshot fracture of femur.	Died.	Two hours after operation, death from shock.
2	G. A. Baxter	1891 " 17	Railroad pulpefaction of r. foot, leg; l. lower extremity as high as middle of thigh.	"	Patient rallied well; four hours later raised himself to reach a glass of water, and instantly expired; no bleeding after operation.
3	" "	1896 F. 4½	Crush of leg and thigh by car wheel.	Recovered.	Operation immediate. Car wheels passed twice over this extremity, crushing bone, with extensive laceration of soft tissues.
4	W. Johnston	1892 M. 39	Railroad pulpefaction of lower extremity as high as middle of thigh.	Died.	Death ninety hours after operation from shock and exhaustion. "There was not one drop of arterial blood and only a slight venous oozing from the muscular tissue."
5	J. D. Thomas	1891 " 18	Femoral vessels divided in Scarpa's triagle by red-hot iron bar, impend. gangrene.	"	Great hemorrhage from the accident. On seventh day after injury, amputation; death thirty-six hours later; no bleeding after operation.
6	A. Schachner	" " 55	Fracture of femur; gangrene.	Recovered.	First dressing six days after operation.
7	Daniel Strock	1894 " 35	Limb pulpefied	Died.	Railway crush; including upper third of thigh. Hemorrhage entirely controlled. Patient died of shock. Patient bled profusely before admission to hospital.
8	R. Matas	1894 " 27	Traumatic gangrene	"	Entire lower extremity gangrenous with great edema. General septicemia. "Saline infusion alone prevented death on the table."
9	" "	1898 " 58	Crush by machinery	"	Extensive comminution of bone and pulpefaction of soft parts. Kidney lacerated. Died from shock
10	George W. Crile	1898 " 26	Injury of hip and thigh.	Recovered.	Crushed under railway train. Considerable hemorrhage at time of accid't.
11	Wm. B. Van Lennep	1897 " 46	Compound comminuted fracture of right thigh.	Died.	Died from shock within a few hours.
12	L. L. Hill	1894 F. 14	Gunshot wound	"	Died in eighteen hours from shock.
13	Chas. G. Levison	1899 M. 50	Crush by elevator.	"	Operation twenty-four hours after accident. Gangrene in one lower extremity extending almost to the hip; the opposite leg was gangrenous to the knee. Pulse before operation 160. Hemostasis complete. Duration from beginning to end, twelve minutes. Died six hours later.
14	W. S. Bickham	1895 " 48	Comminuted gunshot fracture of femur; upper third.	Recovered.	Saline infusion.
15	" "	1897 " 50	Crush and pulpefaction of thigh; gangrene.	Died.	Gangrene of entire extremity as high as seat of wound.
16	W. E. Parker	1895 F. 8	Railroad crush	"	Hemorrhage well controlled. Died in 12 hr. from shock. "Good quantity of salt solution injected, but the good effect was only temporary."
17	George L. McCoy	M. 35	Severe crush by machinery.	Recovered.	Severe hemorrhage at time of accident. Two pints saline fluid injected in vein at elbow before operation. He rallied from profound shock
18	G. K. Dickinson	1892 " 25	Compound comminuted fracture.	Died.	Died in shock. Hemostasis complete. Subcutaneous injection of saline fluid by rectum. No intravenous injection.
19	W. C. Dugan	1896 " 30	Railroad injury	"	Thigh was amputated for injury at upper and middle third. Secondary hemorrhage occurred and stump was cut through higher up, and the fragment of bone disarticulated. Died eight hours after last operation.
20	B. Hatchett	1891 " 31	Legs crushed under car wheels.	"	Died 48 hours after operation. Internal injuries. One extremity amputated at hip, the other just below knee. Absolutely no loss of blood.
21	H. A. Sifton	1897 " 45	Railroad crush of thigh	"	Intravenous saline injection, 2000 c.c. before amputation. "I have often used saline injections before operating in severe railroad injuries with most gratifying immediate results. I have, however, observed symptoms in some of the fatal cases after its use which I have thought might be due to the direct effect of the fluid upon the blood."
22	" "	1898 " 22	Railroad crush of thigh with compound dislocat'n of hip.	Recovered.	
23	E. F. Robinson, U. S. A., Philippine Islands.	1900 " 62	Gunshot wound of femur; explosive effect.	Died.	Died in twelve hours from shock. While under ether and before operation one pint normal salt solution was given by hypodermoclysis. During operation the pulse became very weak and one quart of salt solution injected into veins, followed by marked improvement in heart action. Symptoms of shock supervened about seven hours later, and a pint more was thrown beneath the skin.
24	E. A. Neely	1900 " 41	Gunshot wound of femur.	Recovered.	Operation four months after injury. Although patient was in bed from prolonged septic absorption, he stood the amputation so well saline injection was not required.
25	Wm. Perrin Nicolson.	1896 " 22	Railroad crush	Died.	Operation performed when condition of patient was bad on account of other injuries. Hypodermatic injection of salt solution. Died in shock five hours later.
26	P. B. M. Miller	1898 " 21	Gunshot wound of thigh.	Recovered.	Charge of large bird-shot entered the thigh over trochanter major, carrying away all the bone here except a fragment the size of an English walnut which was lodged beneath Poupart's ligament. Patient greatly exhausted from hemorrhage and three days' journey to reach assistance. No intravenous injection of saline solution.
27	George R. Fowler.	1900 " 29	Compound fracture of femur with destructive ostitis.	"	
28	Wm. D. Hilliard	1896 " 35	Railroad crush.	Died.	Compound comminuted fracture of thigh with great laceration of soft parts and much hemorrhage. Amputation eight hours after injury. Perfectly bloodless. Died of shock in a few hours.
29	Frank D. Smythe	1898 " 32	Railroad crush.	"	Left thigh crushed and soft parts pulpefied. Salt solution injected before operation. Died from shock day of operation.
30	P. J. Kirschener	1899 " 33	" "	"	Died twelve hours after operation.
31	H. C. Deaver	1900 " 22	" "	Recovered.	
32	George R. Dean	1894 " 35	" "	Died.	Car wheel crush and pulpefaction of thigh, involving the ilium and outer rim of the pelvis. Severe hemorrhage, with profound shock. No infusion. Died in three hours from shock.
33	" "	1896 " 24	" "	Recovered.	Comminution of femur from knee to middle third of thigh, with pulpefaction of soft structures to near hip.
34	R. Harvey Reed	1895 " 28	Crush of leg and thigh.	"	
35	" "	1896 " 30	" "	Died.	
36	" "	1898 F. 10	" "	Recovered	

Under the heading of septic infection, 94 hip-joint amputations were made. As recorded, they are classified as follows: Pyogenic ostitis or osteomyelitis—not tuberculous—36, with 5 deaths, a mortality ratio of 14 per cent.; tuberculous ostitis or osteoarthritis 41, with 4 deaths, or 9.7 per cent.; gangrene—moist and diabetic—12, with 6 deaths, or 50 per cent.; general cellulitis 3, with 1 death, or 33 1/3 per cent.; ulcer from breaking down of an extensive cutaneous surface 2, with recovery; total for septic infections, 94 cases, of which 16 died, or 17 per cent. Practically all the fatal cases were in a condition of great exhaustion due to prolonged sepsis, or they died from causes not directly referable to the operation. Of the five fatal cases in the first group, 1 was in such a seemingly hopeless condition that the operation was not advised. It was only done at the urgent insistance of the child's parents. The second case was almost equally emaciated and anemic from prolonged septic absorption. A third fatal case was complicated with a fracture which had existed for several months before the operation, while a fourth died of cerebral apoplexy on the tenth day, the cause of death not being referable to the operation.

For tuberculous ostitis and osteoarthritis—or hip-joint disease—4 out of 41 died, or 9.7 per cent. There were no serious complications in these 4 fatal cases,

although they were weakened by the prolonged sepsis and waxy degenerations which are characteristic of tuberculosis in the bones. The operation was undoubtedly the immediate cause of death in each of these.

In the case of gangrene, as one would naturally suppose, the death-rate was exceedingly high, 6 of the 12 ending fatally. In 1 of these a preliminary amputation was made above the knee and, as the muscles were gangrenous at this level, a second operation of disarticulation at the hip-joint was done, followed by shock and immediate death. In the second case, in which an aneurysm five inches in diameter involved the external iliac and femoral arteries, while the hemostasis was complete during the operation, exhaustive hemorrhage followed the removal of the



Osteosarcoma of femur.

tourniquet, the bleeding coming from broken-down vessels at the seat of the aneurysm. The patient was septic and greatly exhausted by reason of the gangrenous condition of the entire lower extremity. In the third, the patient died from pneumonia, a week after the operation. Two other fatal cases had prolonged septicemia, to which, with the added shock of the operation, they quickly succumbed. A sixth case of diabetic gangrene had practically recovered from the operation, but died from cerebral embolism at the end of the second week. One case of cellulitis died out of 3, the fatal one being extremely septic and anemic at the time of operation. Improvement followed, but secondary infection of the flaps took place, necessitating a revision which was followed by death. One case of extensive ulcer resulting from the breaking down of scar tissue following a burn in youth was of doubtful diagnosis, but was classed as an ulcer because no demonstration of epithelioma was made.

In the third group, injuries with or without septic infection, there are 36 cases with 23 deaths, a mortality ratio of 63.9 per cent. Twenty-four disarticulations at the hip were performed on account of extensive injuries to one or both lower extremities by railway trucks or heavy machinery. Of these, 16 died, a mortality ratio of 66.6 per cent. When we consider the character of these injuries and the unfavorable conditions to which the patients were subjected, this high rate of mortality is not surprising. Hemorrhage more or less severe occurred in all cases, and it was difficult, and at times impossible, to overcome the shock which supervened. It is more than probable that had the intravenous injection of a saline solution been made before all of these were subjected to operation, the ratio of mortality would have been decreased, since the majority of the fatal cases died in shock and before septic infection was observed.

CASE 2.—Here the right leg and foot and left lower extremity were crushed as high as the middle of the thigh. Amputation was performed at the hip on one side, and at the knee on the other. The patient died in shock four hours afterward.

CASE 3.—This patient presented a crush of the leg and thigh by a car wheel, with extensive laceration of the soft tissues. Operation was immediate, and he recovered.

CASE 4.—Pulpifaction of the lower extremity, as high as the middle of the thigh was present here and the patient died in ninety hours, from shock.

CASE 7.—Here there was crush and pulpifaction as high as the upper third of the thigh. Profuse hemorrhage occurred before admission. The patient died of shock within a few hours.

CASE 10.—A crush of the hip and thigh with considerable bleeding at the time of admission was followed by recovery.

CASE 16.—Death in twelve hours, from shock. Salt solution was injected into the veins.

CASE 19.—This patient recovered from the first operation, but secondary hemorrhage ensued. Amputation at the hip-joint was followed by death in eight hours, from shock.

CASE 20.—Death in forty-eight hours, here followed one extremity amputated at the hip, the other just below the knee. There were also internal injuries.

CASE 21.—This patient died within a few hours, from shock. Salt solution was injected into the veins.

CASE 22.—This case was a crush of the thigh, and compound dislocation of the hip. The patient recovered.

CASE 25.—This patient died of shock, in five hours. Salt solution was tried hypodermically. The patient's condition was practically hopeless on account of other injuries.

CASE 28.—Here a railroad crush presented great laceration and much hemorrhage. Amputation eight hours after injury resulted in death in shock within a few hours.

CASE 29.—This was also a railroad crush, of the left thigh, the soft parts pulpified. Salt solution was injected into the veins. Death followed in twenty hours, from shock.

CASE 30.—This patient died in twelve hours, from shock.

CASE 31.—Recovery resulted.

CASE 32.—Crush and pulpifaction here involved the thigh and the ilium and outer rim of the pelvis, with severe hemorrhage. The patient died in three hours, from shock.

CASE 33.—Here the femur was crushed from the knee to the middle third of the thigh, with pulpifaction of the soft structures to near hip. Recovery followed.

CASE 34.—A crush of the leg and thigh was here followed by recovery.

CASE 35.—Death followed a crush of the leg and thigh in this case.

CASE 36.—Recovery was the result after a crush of the leg and thigh in this instance.

MACHINERY CRUSHES.

CASE 9.—This patient presented extensive comminution of bones, pulpifaction of the soft parts, and the kidney lacerated. Death in shock followed.

CASE 13.—A crush in an elevator was followed by operation twenty-four hours after the accident. Gangrene had supervened in one extremity, almost to the hip, and in the opposite leg to the knee. The patient died in six hours, from shock.

CASE 15.—Crush and pulpifaction of the thigh, with gangrene of the entire extremity as high as the seat of the wound, resulted fatally.

CASE 17.—A severe crush by machinery, with extensive hemorrhage at the time of the accident, resulted in recovery. Two pints of saline fluid were injected into the veins.

COMPOUND COMMINUTED FRACTURES.

CASE 6.—Comminuted fracture with gangrene was followed by recovery.

CASE 8.—Traumatic gangrene of the entire lower extremity existed, with great edema and general septicemia. The patient died. Saline infusion alone prevented death on the table.

CASE 11.—This patient died in shock after a few hours, in a case of compound comminuted fracture of the right thigh.

CASE 18.—This patient presented a compound comminuted fracture, received subcutaneous salt solution, and by rectum, but died in shock.

CASE 27.—This compound fracture with destructive ostitis was followed by recovery.

GUNSHOT WOUNDS.

CASE 1.—A gunshot wound, compound comminuted fracture, with immediate operation, resulted fatally in two hours, from shock.

CASE 12.—This gunshot wound, with extensive lacerations and hemorrhage, caused death in eighteen hours, from shock.

CASE 14.—The same, with compound fracture of the upper third, with saline infusion, resulted in recovery.

CASE 23.—This patient received a gunshot wound with an explosive missile. While under ether and before operation, a pint of normal salt solution was given under the skin. During the operation a quart was injected into the veins, followed by marked improvement of the heart's action. Symptoms of shock supervened about seven hours later, and a pint more was thrown beneath the skin, but he died within twelve hours, from shock.

CASE 24.—In a gunshot wound of the femur, operation was not done until four months after injury. The patient was in bad condition, from prolonged sepsis. No saline injection was used. Recovery followed.

CASE 26.—A gunshot wound caused by a charge of bird-shot entering over the trochanter shattered the bone. The patient was greatly exhausted from hemorrhage and a three days' journey to reach assistance. No intravenous injection was made. He recovered.

CASE 5.—This patient had gangrene resulting from division of the femoral vessels by a red-hot bar of iron. Gangrene ensued on the seventh day, before amputation was done. Death resulted in thirty-six hours, from shock.

In addition to the foregoing I have two cases of railway crush of the thigh and hip in which the same method of hemostasis was employed, in which the femur was divided in one instance at the lesser trochanter, and in the other one and one-half inches below this point. There were extensive lacerations of the gluteal region beyond the level of the hip in one of these cases, while in the other the right leg and thigh bones were crushed to pulpifaction to within eight inches of the hip-joint. This patient was not discovered until several hours after he was run over by a train of cars, remaining on the cold ground throughout a greater portion of the night. He was then brought fourteen miles to the hospital, when the amputation was made. These two cases of recovery would reduce the death-rate to 60.5 per cent., but since they are not disarticulations, I have not included them in the statistics. The operators were Dr. P. B. Barringer, Charlottesville, Va., and Dr. A. W. Knox, Raleigh, N. C.

I have an additional and very instructive case occurring in the practice of Dr. George E. Brewer, in which the method of hemostasis was employed for gunshot wound of the middle and upper third of the thigh, but as the bone was divided near the lesser trochanter and disarticulation not performed, I have not included it in the statistics. This injury was inflicted with a soft-nose missile of high velocity, striking the femur about the middle, comminuting this bone from near the knee to the trochanter, with extensive destruction of the muscles by reason of the explosive effect of this form of bullet. The pins were extemporized from fence wire and the hemostasis was reported as complete.‡

Of the 267 cases of disarticulation at the hip-joint for all causes herewith reported, 53, or 19.8 per cent., died. Every fatal case is recorded, and this list includes a number that died from intercurrent disease, such as pneumonia and apoplexy, although the cause of death was not justly referable to the operation. Several died from sepsis, one on the twenty-sixth day, which, as Mr. Chavasse of the Birmingham General Hospital remarks, "was an avoidable cause of death."

In many of the accident cases, while it was none the less the duty of the operator to give the patient this last chance for life, the extensive mutilations, such as the crushing of one or both lower extremities under car wheels or in machinery, and the exhausting hemorrhage which occurs in most of these, together with grave injuries of the viscera, made a fatal termination almost inevitable. Moreover, in the fatal cases in which the amputation was done for the relief of moist and diabetic gangrene, the prognosis was almost as unfavorable as after the most extensive injuries. In Ashhurst's "International Encyclopedia of Surgery," issued in 1881, Dr. F. C. Shepperd gives to that date a total of 633 cases of amputation through the hip for all causes, with a mortality ratio of 64 per cent. In *The Lancet* for March 5, 1892, Mr. Frederick Page gives 16 cases in which the amputation was done by other methods for disease in the Royal Infirmary, Newcastle-on-Tyne, with a ratio of mortality of 37.5 per cent. The death-rate for disease in the statistics herewith given is 17 per cent. Dr. John Erdmann, of New York, collecting the figures of eight hospitals of this city, gives 18 cases done by all methods with 8 deaths, mortality ratio of 44.4 per cent. Of these 18 cases, in 7 the method of hemostasis here advised was employed, and all of these recovered, leaving in this list 8 fatal cases in 11 amputations done by other methods. Asepsis must share with the improved hemostasis the credit of this diminished rate of mortality. These 267 amputations were performed by 123 different operators, and under all the varying conditions of civil and military practice.

The simplicity and efficiency of the method is evident in the fact that from the country practitioner with inefficient assistance and limited experience in major

‡ In the "Medical and Surgical History of the War of the Rebellion," there is given a list of all amputations at the hip-joint done in military practice to the date of the issue of that volume. They are divided into: 1, primary; 2, intermediary, and 3, secondary periods, and re-amputations.

There were 53 amputations in the primary period—within the first twenty-four hours after receipt of the injury—with two recoveries, a death ratio of 96.2 per cent. Of those done in the intermediary period, i. e., during the inflammatory stage and reckoned from the third to the thirtieth day, both inclusive, there were 32 cases, with 3 recoveries, a mortality ratio of 90.6 per cent. In the secondary period, i. e., after the entire abatement of the acute inflammatory stage and after the thirtieth day, there were 31 operations with 4 recoveries, a mortality ratio of 87 per cent.

surgery, to the metropolitan surgeon with all the accessories of the modern technique, it has almost without exception met with full approval and adoption. The few objections which have been advanced, as for instance the difficulty of disarticulation, and the free oozing from the large muscular surface divided, can no longer hold in the present improved technique of the operation. We all agree with Mr. Chavasse, who says, in his excellent article already quoted, that "it is quite possible and probable that cases operated upon by a variety of surgeons will show a larger mortality-rate than if one particular surgeon had had the entire experience, and we are justified in concluding that an improved modern technique of operating which includes the antiseptic and aseptic methods, has reduced the mortality of a formidable procedure to such really small dimensions that in suitable cases there is no longer any actual excuse for procrastination, and that we are justified in urging operation in cases which up to now we have been content merely to recommend."

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THE OCULAR EXPRESSION OF INTRANASAL LESIONS.

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Ocular symptoms are not uncommon attendants of focal suppuration of the nasal cavities.

Although admittedly more frequent, it is by no means established that such local suppuration starts invariably in one or several of the pneumatic accessories of the nose. Focal suppuration may also begin, in a smaller number of cases, in the mucosa without implication of the sinus cavities, especially in the inferior, anterior portion of the middle meatus and even of the septum nasi.

It is also certain that various ocular symptoms which attend so many intranasal lesions—because they are so frequently and commonly met with—are looked upon as transitory and uncertain reflex phenomena, and are regarded of little diagnostic importance. For this reason they do not receive the attention they deserve, and are often peremptorily disposed of as not worthy of much consideration. Nevertheless, telling evidence that a better knowledge of the interdependence of the symptoms of intranasal and ocular lesions is at hand, is being constantly furnished by numerous contributions from rhinologists as well as oculists—each from his point of view adding practical suggestions which must serve the common purpose of more accurate information of diagnosis and a more successful therapy.

Within the range of this brief communication, no reference will be made to the ocular symptoms in general. These are on the whole fairly well known. Mention will be confined to certain phases of more uncommon intranasal lesions which, so far as their ocular expressions are concerned, have not been fully described. It must furthermore be stated that the observations and conclusions about to be mentioned, bearing on this point and of common interest to both specialties, are here considered wholly from the standpoint of the ophthalmologist; also, that the successful management of ocular symptoms in cases of this class is unsatisfactory or impossible until their dependence upon a nasal lesion is recognized.

Two classes only, of intranasal lesions, will be considered. They both furnish the oculist with perplexing experiences and with unlooked for disappointments.

The first group includes certain chronic lesions which invade the anterior region of the middle meatus of the nose—the most anterior cells of the ethmoidal labyrinth—bulla ethmoidalis, the region of the uncinate process, hiatus semilunaris and infundibulum.

The point of interest is that the morbid changes which are enacted and account for persistent ocular phenomena are attended by a lesser or even an entirely negative expression on the part of the nose. Often a most careful search must be made before a focal suppuration of the mucosa of the nose or of the air-cells of the locality is discovered. In some cases cystic distention of the cells, with choking of their contents and plugging of their ostia, caries of their bony walls and even the remote sequences of former morbid processes—solidification or rarefaction of the framework of the bone—are found; in others, all tangible evidences are absent until revealed by an exploratory operation undertaken mainly for purposes of diagnosis.

It must also be remembered that the region in question is often the seat of an anomalous individual development to which a congenital legacy of syphilis or scrofulous and rhachitic manifestations during early life, afford the necessary predisposition. The growth and subsequent development of the ethmoidal labyrinth are so altered that excessive and abnormal crowding or impaction of the anterior and lateral air-cells results. It can furthermore be assumed that in such cases more or less interference with the physiologic purposes must follow, and that the declaration of any morbid process may be attended by rather uncommon symptoms.

Clinical Expressions of Lesions.—Two principal clinical expressions of lesions of this region of the nose on the part of the eyes are met with:

1. Persistent injection of the vessels of the ocular conjunctivæ with prominence and distention also of the muscular branches, often accompanied by passive edema of the retrotarsal folds. The palpebral conjunctiva does not ordinarily participate in this vascular engorgement. There is no abnormal secretion in quantity or quality, but there is present much functional distress of the eyes. Not infrequently there is observed a retraction of the upper lid and that peculiar stare which is so generally associated with a retarded lid action due to disordered innervation of the sympathetic fibers.

2. The other or second clinical expression dependent on the same or a similar intranasal disturbance, consists of a group of far more unmanageable and persistent symptoms. In cases of this class, the most persistent neuralgic phenomena, not conspicuous because of their severity, but mainly for their persistent nagging features, are present, associated with the most distressing functional disturbances of the eyes.

Any continued effort in reading, or other close work, produces prolonged and severe suffering. This is most pronounced during the early part of the day and wears

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away toward its close and at night. The pain is neuralgic in character. It is referred to certain points along the inner wall of the orbit, the eyeball and the brow. The most uniformly present points of pain are those along the inner and upper orbital wall. They can be easily discovered by passing and pressing the finger against the inner wall of the orbit at a short distance from the free margin. Exposure to bright light, sudden changes of temperature, over-heated air laden with dust or irritating vapors—in fact, anything which may irritate the mucous surfaces of the nose through external agencies, as well as internal ones resulting from excessive mental fatigue, an overwrought nervous system from worry or other reasons, are the exciting causes for this persistent suffering referred to the eyes and frontal regions.

As already stated, most subjects of this class are neurasthenics in the fullest sense of the word. For this reason there is present an almost interminable train of nervous phenomena—functional and transitory—but nevertheless excessively annoying to the sufferer.

This is an incomplete account only, of the ocular symptoms. The description of these cases is not complete until a brief mention is made of the pathologic changes which are responsible for them, so far at least as they are at present known or understood. It must also be admitted that not until the nose is regarded as furnishing a possible starting-point and cause for the ocular lesions, can such cases be satisfactorily managed. The most searching examination of the eyes, followed by the correction of any optical error or muscular anomaly, no matter how trivial, will fail to bring about even partial relief from the annoying symptoms. The experience of every oculist furnishes one or many instances of this class. Doubtless, in all or most of these cases—for this should be the rule in every case of persistent irritation of the conjunctiva or neuralgic disturbance without tangible cause on the part of the eyes—a careful examination of the nose has been made. Such examinations are often attended with negative results. Even in those cases referred for more accurate examination to the rhinologist which are sent back with a negative opinion—that the nose offers no positive evidence of a morbid process sufficient to account for the annoying symptoms—efforts should not be abandoned to seek and find the cause for the annoying eye symptoms in the concealed localities of the nose referred to.

My experience has long made me familiar with these cases. In one of the earlier observations, the general conclusion so frequently confirmed, that lesions of the frontal sinus and anterior ethmoidal cells are commonly associated, was not upheld by the disclosures of surgical intervention. The frontal sinus was found normal in size and the mucous lining healthy. The obstinate neuralgic symptoms persisted. By accident, later, I discovered a focal suppuration in the anterior portion of the middle meatus of the nose. Careful probing led to the discovery of denuded bone and empyema of the cells. These were broken down, thoroughly curetted and free drainage established. The symptoms speedily subsided. Recent observations have added to this accidental discovery. In my experience with these cases I can only confirm what has been already established by others that the lesion on the part of the nose is frequently a local suppuration which begins in the mucosa. It may, in certain cases, be independent of it, but it is generally associated with a latent empyema, caries of the walls, hyperostosis or rarefaction of the air-cells of this locality.

It will also be found that in a larger proportion of cases of this class, with the symptoms described, there is not an implication of the frontal sinus, but the pathologic changes are enacted in the region of the infundibulum, hiatus semilunaris and outlets of the air-cavities of the anterior locality of the ethmoid. These are often latent clinically and, for this reason, difficult of discovery even if the most careful methods of examination are followed.

Another point which deserves to be emphasized—as far as my personal observations are concerned—is that in most of these cases congenital causes, or those which exert their baneful influences early in life—syphilis, rhachitis, scrofula, etc.—often furnish the individual predisposition for these obscure intranasal lesions and their ocular attendants.

The second group refers to cases better understood and unmistakable so far as the diagnosis and general character of the nasal and ocular lesions are concerned.

There is invariably present in these cases a focal suppuration in the nose—of the inferior meatus, inferior turbinate—or of the adjacent cells of the ethmoid and frequently of the maxillary sinus. The nasal lesion, however, because of the dominant ocular symptoms, does not receive adequate attention.

The cases referred to are those which are considered the most unmanageable of tear-sac and nasal duct lesions. Chronic suppuration with fistulæ of the tear-sac and granular degeneration of its mucous linings are present, together with thickening of its walls, vicious bone-ulceration and sequestration on the part of the osseous portion of the nasal duct, focal suppuration of the inferior meatus of the nose, ethmoidal labyrinth, maxillary sinus, etc.

These are the cases in which the radical extirpation of the tear-sac by cauterization or excision, with or without removal of the lachrymal gland, is necessary. The removal of the lachrymal gland may not be necessary in all cases. If the removal of the tear-sac is thoroughly accomplished, and if the nasal lesion at the same time receives the attention it deserves, good and permanent results can be obtained without it. For this reason, the removal of the lachrymal gland should not be resorted to in surgical ventures of this kind, until it has been demonstrated that this is a necessary measure.

The method which has furnished me with the best results includes, in addition to the most radical extirpation of the tear-sac—excision, curettage—equally thorough attention for the nasal lesion.

Briefly described, the operation which has been practiced successfully in numerous instances, consists: 1, in the destruction and obliteration of the canaliculi or entrance to the dilated and suppurating tear-sac, by the aid of the galvanocautery. This is followed by excision of the tear-sac through a large incision until every vestige of the soft parts, the circum-saccular thickenings and fistulous tracts, etc., are removed. The osseous canal—the most important feature of the operation—is now widened with chisel, mallet and curette until a free, funnel-shaped communication with the nose has been secured and every trace of carious or sequestered bone has been thoroughly removed. The adjacent smaller cell or cells of the turbinates, as well as the cells of the ethmoidal labyrinth, are next opened, explored and, if necessary, curetted until the floor of the inferior meatus is reached. The inferior and middle turbinate are as thoroughly removed as the judgment of the surgeon may direct, to bring about a large and free cavity. The external wound is closed with sutures.

The advantage of this method is that the external wound closes and heals up rapidly, and drainage or whatever subsequent treatment may be necessary, is accomplished with ease through the nose. The after-treatment is much shortened and less painful, and the resulting scar much less conspicuous.

A BRIEF NOTE ON THE PATHOLOGY, DIAGNOSIS AND TREATMENT OF NASAL ACCESSORY-SINUS AFFECTIONS.*

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It is now generally recognized that affections of the nasal accessory sinuses are more common than they were formerly supposed to be. Many physicians still hold the opinion, however, that neither their frequency nor import are as yet fully appreciated. By careful examination many a case of supposed rhinitis will be found to be associated with, and dependent upon, a chronic, or acute, sinusitis. This is particularly the case in the condition known as purulent rhinitis in children, where the sinusitis is the rule rather than the exception. Moreover, the proper treatment of the sinus disease will result in great amelioration, if not complete cure, of the so-called purulent rhinitis. If it be true that a chronic purulent rhinitis is due to, and maintained by, a chronic sinusitis, and if we accept the view that atrophic rhinitis is a sequel of chronic purulent rhinitis, then it is evident that we must consider chronic sinusitis a very important factor in the etiology of chronic atrophic rhinitis. Certain it is that careful examination will reveal the presence of chronic sinusitis in a very large percentage of the cases of atrophic rhinitis, and equally certain is it that, in order to get relief from the atrophic rhinitis in such cases, we must first cure the sinusitis. Indeed, even in those cases of atrophic rhinitis that do not seem to be associated with chronic sinusitis, it is very probable that a sinusitis was present earlier in the progress of the case, but had gradually subsided and disappeared. Nasal polyps will often be found associated with chronic sinusitis, and we find it frequently necessary to treat the sinuses after removal of the polyps, for we can almost certainly predict that, without such after-treatment, a return of the polyps will occur. The pathologic changes that take place in the unobstructed nostril, in cases of deviation of the septum—which I have described in another paper[1]—frequently lead to sinusitis. A deviated septum will also frequently cause a chronic sinusitis on the obstructed side. All cases of deviated septum, therefore, should be carefully examined for existing sinusitis, and if this condition is present it should be relieved either before or after operation for the deviation. It is a good rule of practice, in all cases of obstructive or septic conditions of the nasal chambers, to suspect and carefully examine for existing sinus-disease.

There is one class of chronic sinus affections which I desire to mention more particularly, for as yet but little attention has been called to them. These are cases where the nasal outlets of the sinuses have become obstructed, not by gross pathologic lesions, such as polyps, deviated septum, etc., but rather by swelling and thickening of the mucous membrane at the nasal openings of the sinuses, or again by small masses of granulations, or even by inspissated mucus obstructing the openings. This class of cases closely corresponds to cases of closure of the Eustachian tube from similar causes; indeed, in a certain sense the tympanum, or middle ear, may be considered an accessory sinus, with the Eustachian tube its rather long drainage-tube. The obstruction to the openings of the sinuses in this class of cases may be a complete and fairly permanent one, or the openings may be open at times but becoming obstructed by slight causes, such as coryza. Within the past few years many such cases appearing subsequent to attacks of influenza have been observed.

When the nasal openings of the sinuses are closed, either temporarily or more or less permanently, in the manner just described, certain pathologic changes will take place in the mucous membrane lining the obstructed sinus. In some instances, these pathologic changes lead to inflammation, with its usual course, resulting in suppurative sinusitis with the common symptoms of this condition. In other instances, a chronic congestion of the membrane seems to be the result. I am also of the opinion that retention of gases in the obstructed sinuses is present in some cases, and, in others, that the air in the closed sinuses becomes rarefied, thus causing a chronic congestion of the lining of mucous membrane.

The diagnosis of this class of cases is greatly aided by the subjective symptoms, pain in the head being the most prominent one. This pain may be described as one that is more or less continuous, frequently worse upon arising from bed in the morning, wearing off somewhat during the day; a headache that is usually increased by leaning forward, or stooping—usually described by the patient as dull or boring in character; one that is usually increased by colds in the head, that frequently is made worse by exposure to cold winds, etc., that is frequently present even during sleep—a pain that is accompanied by a sense of heat in the face or forehead. This feeling of heat is particularly felt when the patient is agitated. During the summer season, or in clear weather, or when living an open-air life, this pain is often ameliorated. In winter, cold and chilly weather, or when the patient is run down in health, it is usually more severe. The situation of the pain varies with the particular sinus affected. If the frontal sinus alone is involved, the pain is felt in the forehead or over the eyes. If the anterior ethmoidal sinuses, the pain is usually located at the root of the nose, near the inner angle of the eye, or is felt deeper, apparently back of the inner portion of the eyeballs. If the posterior ethmoidal cells are at fault, the pain is usually referred to the temporal region, at times also to the vertex, or back of the eyeballs. It has seemed to me that pain from affection of the sphenoidal sinuses is frequently felt in the back of the head. As it is not infrequent for several of the sinuses to be affected at the same time, the pain may be referred to several of the regions mentioned. It may be said, however, that the pain in these sinus affections is nearly always a localized one, although several localities may be implicated at the same time. The patient occasionally complains of the head paining as a whole. In some cases the pain is unilateral, resembling migraine, one entire side of the head being involved, and, quite usually, when this is the case, it is always the same side that pains. In some cases, when

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1. Read at the Sixth Annual Meeting of the American Laryngological, Rhinological and Otological Society, Philadelphia, Pa., June 1, 1900.

the obstruction to the sinuses is not permanent, the patient may be entirely free from pain in the head at times, and may remain so for a longer or shorter interval, but should the patient "catch a cold" in the head, the pain returns, located in the same places as those in which it was previously felt. It may then continue permanently, or be repeated at longer or shorter intervals. The diagnosis is aided by the fact that pressure over the affected sinus—particularly when the frontal or anterior ethmoidal sinuses are involved—will usually elicit tenderness and pain.

Inspection of the nares will frequently reveal an obstructive lesion, such as deviated septum, polyp, enlarged turbinals, etc. At times a thickening or slight curvature of the superior anterior portion of the bony septum is the only obstructive condition to be observed. This produces, however, sufficient narrowing of the upper portion of the nasal chambers to cause blocking of the sinuses, whenever the soft tissues are swollen. Not infrequently a tenacious, whitish muco-pus, or seropurulent discharge, may be extracted in long, thin threads. Discharge, however, may be entirely absent in many cases, and some of these may suffer from the most severe and persistent pain in the head. Transillumination is at times a valuable aid to the diagnosis, but is not always a reliable one.

In the treatment of acute or chronic inflammation of the nasal accessory sinuses, attention must be given: 1, to providing proper drainage to the affected sinus; 2, to the proper treatment to the disordered lining membrane. In order to carry out such treatment, various surgical procedures are in many cases found to be necessary. It is not my purpose, however, to discuss the operative and medical treatment at this time, but I desire merely to draw attention to the great importance and desirability of opening the natural outlets to the sinuses whenever possible, and this I would advocate even when we have found it necessary to do the so-called radical operations. When we succeed in getting a natural outlet open, it is naturally inclined to stay open, whereas, all artificial openings tend to close very quickly. Many of the milder chronic cases of sinusitis—and nearly all of the acute cases—are capable of being quickly cured, if the natural nasal openings of the affected sinus are opened and kept open, and appropriate local and general treatment instituted. In order to obtain this opening and drainage through the natural outlets of the sinuses, all intranasal obstructions of the openings of the sinuses should be removed. Obstructive deviations, or spurs of the septum, should be corrected, enlarged middle turbinals should be reduced in size; frequently the amputation of the anterior portion of the middle turbinal is necessary. Polyps should be thoroughly removed by evulsion. At times, small polyps, situated high up in the nares, are found to cause the obstruction. Masses of granulations choking the sinus openings are to be treated in a similar manner.

Finally, I desire to draw attention to the excellent results obtained from forcibly syringing the openings and sinuses with hot dry air used under pressure. In a large number of cases I have been able by such use of hot dry air to open obstructed sinuses very quickly, giving the patient great and, in many instances, quick and permanent relief from pain, immediately increasing the drainage and removing the retained secretions.

I first drew attention to the hot-air syringe, which I employ, and the method to be employed in its use, in a paper[2] presented to this Section at Philadelphia in 1897. Subsequently I have published other results with further description of the process.[3] The air is used as hot as the patient can bear it. The nasal chambers are thoroughly cocainized, and at times the cocain applications are to be followed by the use of the aqueous solutions of the suprarenal capsule. On account of the small size of the tube, an air pressure of from 30 to 40 pounds is usually needed, and the hot air is applied to the openings and forced directly into the sinuses. At times a small catheter aids in accomplishing this purpose. Acute sinusitis treated in this way, aided by hot water applications externally, low diet, purgation, attention to the digestion, etc., will usually yield in a few days. The milder cases of chronic sinusitis likewise yield readily, and in the particular class of cases of partial or complete closure of the outlets, which I have described, and when uncomplicated with sepsis of the sinus, the relief is obtained very speedily, although the symptoms may have been present for months or years.

2. JOURNAL A. M. A., Oct. 2, 1897.

3. Phila. Med. Jour., May 7, 1898; also Sept. 9, 1899.

THE REDUCTION OF TEMPERATURE IN FEVERS BY EVAPORATION BATHS; WARM WATER BEING USED FOR BATHS.

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The method of using cold in fevers described below is the same which I presented at a meeting of the American Association of Physicians in 1895.[1] Since that time I have given some hundreds of baths by this method, chiefly in typhoid fever, and the results have been so good that I desire to take up the subject again.

I shall not attempt any detailed presentation of the cases in which this method of reducing the temperature was employed, but merely indicate the principles upon which its successful use depends; for if these are clearly understood, and the directions carefully followed, satisfactory results will ensue. It is necessary that the physician should demonstrate to the nurse exactly what is required to be done; if after this demonstration the reduction in the temperature is not on an average of 2 degrees for each bath, there has probably been some failure to fulfil the conditions essential for success.

Cold as an Antipyretic.—It is universally agreed that cold is our best and safest antipyretic; but the method of applying it by a cold bath taxes the strength of the patient; the lack of conveniences in ordinary practice for such a bath, and of persons who know how they should be given, as well as the objections made by the patient and friends, are obstacles to its use.

Temperature Reduced by Evaporation.—My purpose is to show how the temperature can be reduced by the use of cold by a more comfortable method than the cold bath. The essential points are that the body be covered by a layer of thin gauze on which warm water is sprinkled; the temperature of the body is reduced by the evaporation of the water, and this evaporation and cooling are promoted by a current of air.

The rapidity of the cooling depends to a considerable extent upon the dryness of the air and the volume of it at our disposal. In Boston, for example, during the season when the houses are heated, the percentage of moisture indoors is low; and during the summer months, though the percentage of moisture may be two or three times as much as during the winter months, by means

1. A More Comfortable Way of Using Cold in Fevers: Trans. Am. Assn. of Physicians, 1895.

of open windows the volume of air at our disposal is large. Either a smaller volume of dry air or a larger quantity of more moist air will serve the purpose, as the quantity of water the air has to take up in the use of this method is not large, and its absorptive power is required only at intervals. The doors of the room should be open, and in warm weather also the windows. Exceedingly favorable conditions would be found in dry, warm climates.

Principles of the Method Tested by Experiment.—To gain some idea of the efficiency of this method of cooling and the best way to employ it, I took a large bottle, holding rather more than a gallon of water, the temperature of which was 104 F.[2] The bottle was wrapped with surgical gauze—having about sixteen threads to the inch—which was sprinkled with water at the temperature of the room at short intervals, and fanned continuously by an electric fan. In this way the reduction in the temperature of the water in the bottle during half an hour could be ascertained under varying conditions. From such experiments—they do not represent all of the conditions present in the body—it was found that the water in the bottle could be cooled about 28 F. below its initial temperature of 104 F. in one-half hour, the temperature of the air in the room being 70 F. This method is similar to the one which has been used for many centuries in hot, dry climates to cool drinking-water.

Number of Layers of Gauze.—I also varied the number of thicknesses of gauze covering the bottle, and found that one or two thicknesses of gauze gave better results than several; four or six, for instance. It is of importance to have the covering for the surface to be cooled a suitable one; something which will hold a thin layer of water on the surface without keeping it warm. The gauze serves this purpose and likewise increases the amount of surface from which evaporation takes place.

Amount of Evaporation Produced with and without Fanning; Electric Fan and Hand Fan Compared.—I found that the reduction in temperature was much greater if the wet gauze were fanned than when evaporation took place unaided by this process. I likewise compared the amount of the cooling of the water in the gauze-covered bottle which took place when an electric fan was used to create a draft, with that obtained by hand-fanning; in the latter case two palm-leaf fans tied together to stiffen each other were used. I found that, under the same conditions, the temperature of the water in the bottle was lowered much less in half an hour by the hand-fanning than by the electric fan. In private practice it is quite feasible to use a hand fan; but in a hospital ward an electric one is better, as to fan several patients a number of times a day would tire the arm of an attendant.

Ice Water Compared with Warm Water.—The use of ice water to moisten the gauze suggested itself to me. I therefore placed two of the gauze-covered bottles in the same current of air, one of them being kept wet with water at 100 F., the other with ice water (32 F.) and at the end of half an hour the difference in temperature of the water in the bottles was only 1 degree, a difference of about 5 per cent. This experiment was repeated, using the cold water on the bottle which had previously had warm water, with the same result. This slight increase in cooling by sprinkling the patient with cold instead of warm water does not offset the discomfort of shock which not cold water only, but even cool water gives, and of which patients complain. By using warm water to moisten the gauze, and continuing the current of air one or two minutes longer, we can readily obtain fully as much cooling as when cold water is used for the slightly shorter period. If for any reason this shock to the nervous system is desired, cool water may be used.

Use of Alcohol.—I also tried moistening the gauze with alcohol—95 per cent.—instead of water, and found that the temperature of the water in the bottle was not much more reduced in half an hour than it had been when water was used on the gauze; the difference between the two was about 10 per cent. This did not seem to me sufficient to offset the inconvenience of alcohol, as much more alcohol would have to be evaporated to obtain the same amount of cooling, the latent heat of water being much greater than that of alcohol, which is inflammable and expensive, leaves a stuffy odor in the room and may irritate the skin.

The principle underlying this method is made more evident when we consider that the cooling which takes place when 5 c.c.—one teaspoonful—of water are evaporated at 104 F. represents roughly the reduction in temperature of a quart of water cooled from 104 F. to 99 F., or the cooling of more than a gallon of water 1 F. The heat taken to evaporate a pint of water is sufficient to cool 289 pounds of water about 4 F.

Test to Determine whether the Heat was Withdrawn from the Water in the Bottle or Air of the Room.—To ascertain whether the heat which evaporated the water was withdrawn from the air of the room, which was usually about 70 F., or from the body of warm water in the bottle, the amount of water which was evaporated in half an hour from the surface of a large bottle covered with gauze, when fanned, was measured, and it was found by calculation that the amount of heat lost by the water in the bottle was due chiefly to the evaporation of the water sprinkled on the bottle. For example, it was demonstrated, in one experiment, that 4000 c.c. of water—the amount contained in the bottle—at 104 F. were cooled 22.5 degrees in half an hour, and that 108 c.c. of water were evaporated. Standing in the room, a similar bottle of water lost 4.5 degrees. To lower the temperature of 4000 c.c. of water 18 degrees requires the evaporation of 70 c.c. of water; as not more than 108 c.c. of water were evaporated in all, it is evident that most of the heat needed to evaporate the 108 c.c. came from the warm water in the bottle and not from the air.

Effect of Warm Water on the Body.—By first cooling the outer layer of the body for a few minutes, by the evaporation of water warmer than the patient—about 115 F.—and then momentarily warming the surface thus cooled by sprinkling again with warm water, we may draw the blood to the surface and send it back cooler to the interior of the body, and thus by the alternate dilatation and contraction of the superficial blood-vessels, we may accomplish more reduction in temperature than by continuous cooling of the skin. That is, physiologically, there are advantages in moistening the gauze on a patient from time to time with water warmer than the patient, rather than with cool water, which would not be apparent in a simple physical experiment. To cool a fever patient by applying warm water rather than cold, seems paradoxical, but it is the better way, and is more acceptable to the patient.

Brandy or whisky administered before giving the bath would promote the dilatation of the superficial blood-vessels.

2. The experiments were also repeated on a larger scale, using copper cylinders instead of bottles, with good results.

Method of Giving Bath.—A rubber cloth or woolen blanket is put under the patient; strips of coarse gauze such as is used for surgical dressings are then placed on him, of sizes suitable to go fully three-fourths around each leg and arm, and the trunk; when moistened they should cling closely to the skin. There should be only one thickness of gauze. This is sprinkled with water[3] at a temperature of 110 to 115 F., sufficiently often to keep the gauze wet, and the patient is fanned.

Duration of Bath.—It is well to begin with a bath of sufficient duration to evaporate a pint of water, and in subsequent baths to be guided, as to the amount of water to be used, by the effect of the previous one. In the later stages of typhoid fever one should remember that the same patient is more susceptible to the action of cold than he was in the earlier stage.

Amount of Water Evaporated a Guide rather than the Time taken.—The time required for evaporation varies with the amount of moisture in the air. If one pint of water is evaporated in one-quarter of an hour, the patient's temperature will fall about so many degrees, but if there happens to be a high percentage of moisture in the air of the room, a longer time is required to evaporate the same amount of water, say one-half hour, and there would not be quite so much lowering of the patient's temperature as when the evaporation occurs in the shorter time. Therefore it is better to be guided by the quantity of water evaporated rather than by the time.

Number of Degrees the Temperature may be Reduced.—The amount of heat withdrawn from the patient may be varied by increasing the duration or frequency of the baths.

Average Reduction of Temperature in Twenty-two Hand-fanned Evaporation Baths.—The average reduction in temperature of twenty-two baths by hand-fanning, given to patients with typhoid fever during July, 1893, was 2.6 degrees; the time required for each bath varied from fifteen minutes to one-half hour; and the amount of water evaporated was about one quart—at times much less, sometimes more. The temperature was taken in the mouth, and the lowest was sometimes not reached for one or even two hours after the bath; once the temperature fell 4 degrees, and once 5. The amount of moisture in the air while these baths were given was probably not far from 70 per cent. These baths are not so mild in their effects as to permit one to disregard the possibility of partial collapse in very weak patients, if pushed too far.

I have used this method in typhoid fever and pneumonia; the patients had less delirium and slept better; and it seems to me to combine safety, comfort, convenience and efficiency to a greater extent than other means of reducing temperature in cases of fever.

The following case illustrates the use of the evaporation bath: A. B., a strong man who had typhoid fever, with a temperature frequently above 103 during three weeks, was given the baths, with hand-fanning, two or three times a day, or whenever the temperature reached 103 F. Each bath was continued about one-half hour, and about one quart of water was evaporated at each bath. The average reduction in temperature of ten baths was 2.2 degrees. Twice during the period when these ten baths were given, a cold tub-bath—65 F.—was given for fifteen minutes to the same patient, in place of the other bath; in one of the cold baths the temperature was reduced 3.1 degrees, in the second 2.6, an average of 2.8 degrees. The temperature may be reduced by the evaporation bath as much as by the cold tub-bath by increasing the number of evaporation baths given per day.

Evaporation Bath Compared with Sponge Bath.—In order to have some suggestion of the respective efficiency of the evaporation and sponge bath, I made the test described below. The sponge baths were given in the following way: The patient having been suitably arranged on a rubber sheet, a large sponge was dipped into a pail of water at 70 F., the excess of water squeezed out, and the patient sponged; the sponge was then squeezed out into an empty pail, dipped in a basin containing ice-water, to cool it, and squeezed out, then again dipped into water at 70 F., and applied to the patient. This makes a very good sponge-bath. Both kinds of baths were kept up for fifteen minutes.

For this comparative test I chose one ward, during a service at the Boston City Hospital, and had one-half the typhoid patients who were admitted to it during five weeks in the summer of 1893, sponged, as detailed above, and the other half treated by covering three-quarters of the body with a layer of gauze moistened at intervals by sprinkling with warm water, and fanned as already described. The patients were taken alternately. There were eight patients in all, four treated in each manner, each receiving a number of baths. I did not pursue the comparison on a large number of patients, as they had to be fanned by hand—if electric fans are used it would be less irksome for the attendants in a ward to give these baths than to give sponge-baths. The directions were to give a bath whenever the axillary temperature of the patient was 103 or over, but 102 would have been a better temperature to select. The rectal temperature was taken one-half hour after the bath, and on the average the temperature was found to be reduced by the sponge-bath rather less than .5 degree, and by the evaporation bath rather more than 1, and the reduction in temperature continued for a longer period after the latter bath had been given; but this comparison is based on too few patients to be exact. Now and then the temperature was reduced 2, 3, and in some instances 3.5 degrees by the evaporation bath.

To give some still further suggestion of what may be expected when the evaporation baths are used, I give the results in fifteen consecutive cases of typhoid fever, in which 235 hand-fanned baths were given. The temperature in each case cited was taken twenty minutes after the bath; the time of bath varied between fifteen and twenty minutes:

BATHS PER PATIENT, WITH AVERAGE FALL FOR EACH PATIENT.

Baths.	Temperature. Degrees.
17	2.56
25	2.70
1	1.40
3	
5	2.20
6	1.53
15	2.36
35	1.70
24	1.80
13	2.74
8	2.10
2	2.20
2	2.90
57	1.65
22	1.70

One patient, not included in the above table, was

3. I use a No. 1—not No. 4—Davidson syringe, onto which is screwed a small, hard-rubber nose about one inch long and one-half inch in diameter, perforated at the end with a dozen holes each about one-sixty-fourth of an inch in diameter. These tips are made by the Davidson Rubber Company, Boston. The gauze should be kept wet, and if the sprinkling is properly done, very little water reaches the blanket on which the patient lies.

given two baths, one of which lowered the temperature 3 degrees; the other caused a fall of 2.8, an average of 2.9 degrees per bath.

Summary.—The patients numbered 15, and were given 235 baths; there was an average fall of temperature, per bath, of 1.94 degree, 1.53 degree being the lowest average fall per patient, and 2.74 the highest average fall per patient; the least fall after a bath was .5 degree, the greatest, 4.8 degrees; the smallest number of baths to one patient was 1, the largest, 57; 5 times the temperature was higher than before the bath—the rise varying from .4 to .8 degree. Twice the temperature remained unchanged after the bath; in 1 case the bath had to be stopped on account of a chilly sensation during the process—the same patient had two other baths, after both of which she felt very uncomfortable.

Directions.—Briefly, the directions for giving evaporation baths are these: Give a bath whenever the temperature is 102 or 102.5 F. Have the patient lie on a blanket during the bath, cover him with one thickness of surgeons' gauze, which, when moistened, shall fit the skin perfectly, and sprinkle the gauze with water at about 115 F. Note the amount of water evaporated, and be guided by this in giving the bath, not by the time required to evaporate the water; the rapidity of evaporation depends largely on the amount of moisture in the air. Have as little clothing on the patient as possible, night and day, so long as the temperature is 102 F. or more; nothing more than a sheet; in private practice the patient may be without covering.

THE STREPTOCOCCUS PYOGENES IN GYNECOLOGICAL DISEASES.

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In 1899 I reported 7 cases[1] of pelvic inflammation operated on in the gynecological clinic of the Johns Hopkins Hospital, in which the streptococcus pyogenes was found to be the infecting agent. Since the publication of that article, and during my service in the hospital, 4 additional cases have been operated on in which this micro-organism was found to be the cause of the inflammatory process. Nine of the 11 cases presented certain features which were indicative of the etiology of the infection. The two exceptions were: 1, an infected myoma, and the other an abscess localized to the cul-de-sac of Douglas which had probably been secondarily infected from the intestinal canal. In 6 of these cases the peritoneal cavity was invaded at the operation and 2 patients, where this occurred, died, probably both from the resulting general streptococcic peritonitis. Attention will be called to this in reporting the individual cases. In the other 5 the peritoneum was not disturbed and all recovered. The high mortality in these cases where the peritoneal cavity was invaded, in contradistinction to the almost uniformly favorable results in celiotomies where the gonococcus is the infecting agent, should make the operator careful to distinguish between these two classes of pelvic infections. It is not always possible to positively know before operation, whether one will encounter the streptococcus or not, but there are certain definite characteristics of streptococcic pelvic inflammation and it is to emphasize these that I again call attention to these infections.

In studying our cases, 9 of the 11 gave definite histories of infection either at labor or miscarriage. The 2 exceptions were the case of infected myoma and the one of localized pelvic abscess in Douglas's cul-de-sac, to which attention has been previously called. The history is therefore of the utmost importance in making a diagnosis. As in the large majority of cases of streptococcic pelvic inflammation the lesion is a parametritis, I will here state the views of some of the more reliable investigators as to the etiology of this disease. Rosthorn says that while the gonococcus may invade the tissue beneath the mucosa, from a clinical standpoint one thing can be asserted, that in parametritis the gonococcus is not found. Bumm, in purulent parametritis, regularly found streptococci, more seldom staphylococci. Doleris and Bourges found, in fetid parametral pus two months after the acute symptoms had subsided, the streptococcus and the proteus vulgaris. Hartmann and Morax found the streptococcus in 21 cases of purulent parametritis. Pfannenstiel, in all such cases operated on by Fritsch, found the streptococcus. Kleinknecht, in 5 cases of widespread parametral exudate, found a mixture of bacteria, staphylococcus albus with bacterium coli, streptococcus pyogenes and the staphylococcus aureus. Jayle found a mixture of the streptococcus with the staphylococcus and the bacterium coli. Bäcker had a case of influenza bacillus infection and Bumm one in which was the Klebs-Loeffler bacillus. Rosthorn found the streptococcus pyogenes and the staphylococcus pyogenes albus and aureus. The last-named author says at least two-thirds of such cases are of puerperal origin. Bernutz, in 104 cases, says 48 were of puerperal, 28 of gonorrheal, 20 of menstrual and 8 of traumatic origin. West gives 77 per cent. as puerperal; Buschbeck-Ettinger, 74.3 per cent.; Grisole, 63 per cent.; Biegel, 55 per cent., and Cullingworth 21 out of 22 cases as puerperal.

The other causes besides the puerperium, according to Rosthorn, of parametritis are gynecological examinations, tents, pessaries, sounds, tampons, operations, excesses in venery, masturbation, use of anticonception sponges and pessaries, cold, hematomata which suppurate, suppurating myomata, dermoid cysts, echinococcus cysts, inflammation of neighboring organs—paracystititis, paranephritis, paraproctitis, paratyphlitis, caseous bone and suppuration of joints. The history should then, in the large majority of cases of streptococcic pelvic inflammation, point to a labor or miscarriage as the beginning of the complaint.

Of almost equal value with the history is the pelvic examination. The pelvic structures present certain characteristics which are almost unmistakeable. These are, the situation of the mass, its consistency, and the intimate connection of the uterus to the walls of the pelvis. To get a correct idea of the site of the pelvic inflammatory mass of streptococcic origin it is necessary to bear in mind the routes of invasion in these cases. In nearly all, the streptococcus invades the surrounding tissues through the lymphatics. As shown by the work of Widal, König and others, when the extension may also take place through thrombosed vessels, through the circulating blood, or by direct extension as in abscess formation. The bacteria occasionally seem to extend along the mucous tract and thus enter the peritoneal cavity. This is probably of extremely rare occurrence. Only one of our cases indicated this as the route of extension and in this case (Case 4) there was also a lymphatic infection. The point of entrance of the streptococcus is usually some abrasion of the mucous membrane of the uterus or vagina or at the site of the adherent placenta. The tendency is for the infection

1. Am. Jour. of Obstetrics, Vol. xxix, No. 6, 1899.

to follow the layers of connective tissue and fascia of the pelvis, and not to invade the adjacent layers. This is admirably set forth by von Rosthorn, in Veit's "Handbuch der Gynäkologie." Bearing these facts in mind the situation of the inflammatory mass is what one would expect. The bacteria going through the cervix or vagina cause a parametric exudate, abscess, or both.

I will not dwell upon the various situations of this parametric exudate further than to state that it lies in the connective tissue surrounding the uterus and vagina and beneath the pelvic peritoneum. It is deep-seated, may be situated in either broad ligament, and is usually unilateral. It may lie posterior to the uterus in the septum between the peritoneal cavity and the vagina, or extending higher may surround the rectum, or occupy the posterior portion of the pelvis on either side beneath the peritoneum. It may be ante-uterine, lying between the uterus and bladder, occupy the space of Retzius, or extending, may be situated higher along the anterior abdominal wall. Laterally, it may lie in the false pelvis on either side. Where the inflammatory process approaches the peritoneal cavity, the omentum, tubes, ovaries, and intestines become adherent and thus tend to protect the general peritoneal cavity from infection. We find this the case also where the point of infection is the placental site, and a similar protective inflammatory process is usually found when the invasion occurs through the tubes. When this protection does not take place a fatal general peritonitis is the result. The mass is nearly always asymmetrical. One finds a mass on one side of the pelvis and the other side normal to palpation, or a mass anteriorly or posteriorly and the remainder of the pelvic structures uninvolved. This asymmetry is in marked contrast to the condition found in gonorrheal infections where the process practically always involves both tubes. The superficial situation of the gonorrheal salpingitis in contradistinction to the deep-seated nature of the streptococcic pelvic infection is of the greatest value in distinguishing between the two.

The consistency of the mass is of the utmost value in making the diagnosis. This consistency is of bone-like hardness. While in the early stages of inflammation the exudate is softish, and after abscess formation this denseness may in a degree disappear, yet in the majority of our cases the extreme denseness of the exudate, even where there was abscess formation, called our attention to the probable nature of the infection. When pus is present it usually consists of a number of small abscesses situated in dense indurated tissue, and the palpation shows the bony consistency before mentioned.

When the lesion is a parametritis there is an intimate connection between the uterus and the pelvic wall. The immobility of the uterus is marked and the exudate can be felt extending directly from this organ to the pelvic wall. The diagnosis then can be made upon the following points: 1, the history; 2, the situation of the pelvic mass; 3, the denseness of the mass; 4, the immobility of the uterus and its connection by the exudate to the wall of the pelvis.

The streptococcus has, according to the history in some of my reported cases, the faculty of remaining alive and capable of culture a remarkably long time in the infected tissue. In one of the cases reported in my first article, the infection apparently occurred twelve years previous to the operation, and in one case reported now there was a definite history of infection two years before admission to the hospital. In the first case the micro-organism was capable of being cultivated, and in the second the patient had, following the operation, a general streptococcic peritonitis which resulted fatally. In the other cases the micro-organism had remained alive for periods varying from ten days to twelve weeks. The two cases mentioned above emphasize the necessity of observing the same precautions against contamination of the general peritoneal cavity in infections of long standing as in those of recent origin.

In conclusion I will say a few words as to the operative procedure. As soon as the mass can be definitely located the operation should take place. The early operation here is as much indicated as in a streptococcic lymphangitis of the arm or other part of the body and for the same reason, i. e., to prevent the extension of the infection. It is unwise to wait for suppuration. When this occurs it is generally in the form of small abscesses scattered throughout indurated tissue, and one is consequently quite uncertain in many cases whether or not pus will be found at the operation. A free incision should be made extraperitoneally, the mass thoroughly broken up by means of blunt dissection so as to evacuate the abscess cavities, and drainage should be established. The location of the incision depends on the situation of the mass. If the mass is posterior to the uterus the incision is made in the upper posterior part of the vagina. If it occurs between the uterus and bladder, a similar incision anterior to the cervix is made. If in the space of Retzius, the incision is made suprapubically. In cases where the mass is in the broad ligaments or in the false pelvis the incision depends on whether it is deep-seated or not. In the former case a vaginal puncture is made lateral to the cervix, and this is dilated with a blunt instrument and the fingers until the mass is broken up. In these cases much care is necessary to avoid injuring the ureter and the uterine vessels. When the mass is in the broad ligament and can be reached from above, the incision is made parallel to Poupart's ligament, slightly above it and toward its outer end, and the dissection is carefully made so as not to enter the peritoneal cavity. Several of our cases were operated on by the latter incision. In one it was thought that the peritoneal cavity had been invaded, but an exploratory incision showed this not to be the case and revealed also the interesting fact that the tubes and ovaries were entirely normal. If the mass is situated still more superficially and in intimate relation to the abdominal wall, the incision is made immediately over it. When the operator is in doubt as to the origin of the infection, that he has thoroughly explored the mass, or there are signs of intestinal involvement, it is better to do an exploratory celiotomy, taking every precaution to avoid contaminating the abdominal cavity or the celiotomy wound. As an interesting example of this was a case operated on by me three years ago. The diagnosis was an abscess in connection with the anterior abdominal wall immediately above the pubes and of unknown origin. The abscess was incised and drained. The patient in a few weeks developed symptoms of intestinal obstruction, and died on the table at the second operation. It was then seen that the patient had carcinoma of the intestine. The carcinomatous mass had become adherent to the abdominal wall and the infection had gone out through the intestine at this point and caused the abscess. An exploratory incision would have revealed this condition and a resection of the intestine would have offered the patient a hope of recovery.

The cases which follow are well worthy of study as

illustrating the points which I have attempted to bring out in this and the preceding article.

CASE 1.—R. F., white, aged 32 years, was admitted June 14, 1899, complaining of abdominal pain and a mass in the left lower abdomen. Her past history was negative; menses regular, painless and profuse—the last period May 17. Married 14 years, she had had five children, the oldest 12 years, the youngest 3 months, and two miscarriages, the last one occurring one year before her last labor.

Present Illness: Her symptoms began soon after her last confinement. She thinks she had no fever nor chills, but was confined to her bed eight weeks with pain and burning at the site of the mass. She was nauseated, had no uterine hemorrhage, but anorexia; no urinary symptoms. She was constipated. Her temperature on admission was 99 F., and pulse 100. She noticed the mass in the left side immediately after confinement.

Examination: Chest normal; general condition good; abdominal walls flaccid, with a visible mass in the left hypogastrium. This mass extended from the pelvis to 2 cm. above the umbilicus. The mass, on the inner side was soft and cystic; harder toward the pelvic wall. There was visible peristalsis in the overlying coil of intestine, and tympanites over the upper and inner portions of the mass. The vaginal outlet was relaxed, the cervix in the axis of the pelvis, the os gaping. The uterus was low in the pelvis, anteflexed, small and drawn over to the left side of the pelvis. The right side of the pelvis was normal to palpation. On the left side was a mass the size of an orange, occupying the position of the ovary, which was exquisitely sensitive. This mass was slightly movable but intimately connected to a hard indurated mass which apparently formed part of the pelvic wall. The latter was as hard as bone and was also extremely sensitive. The diagnosis of neoplasm of the ovary was made on this examination. (The diagnosis of streptococcic parametritis had been made by me in the dispensary.)

Operation: (Operator, Dr. Stokes.) A median abdominal incision was made. The peritoneum was normal in appearance, the uterus and right appendages normal, the uterus drawn over to the left side by the left tube which was adherent. The end of the tube, the ovary, several coils of intestines, the left broad ligament, and the abdominal wall formed a mass which was as hard as "bone." A coil of small intestine was adherent along the left lateral face of the uterus. The tube from its uterine end to where it disappeared into the mass was normal in appearance. The gut where adherent was covered with what appeared to be a pyogenic membrane, and its wall was much indurated. The intestine was, by dissection, separated from the uterus. It was now found that the mass was formed by the gut, tube, and ovary being densely adherent to the pelvic wall. On separating the adherent gut from the pelvic wall a few drops of pus containing streptococci oozed up. The gut was not entirely separated and the ovary was not exposed. The pus did not seem to come from the tube. Gauze drains were placed over the adherent area and the ends were brought out through the lower angle of the wound and through an opening made into the vagina, posterior to the cervix. The upper end of the abdominal incision was closed.

Following operation the patient's pulse went up to 140 within twenty-four hours, and on the fourth day reached 160. The temperature rose steadily and reached 103 F.; leucocytes, 28,000. Vomiting and extreme restlessness were marked. She died on the fourth day. The diagnosis was general streptococcic peritonitis. At bacteriologic examination (Dr. Hunner) cultures showed streptococcus pyogenes.

The history of the case, the site of the mass and its hardness should have made the diagnosis sufficiently clear to have caused the extraperitoneal incision by which the mass could have been reached and drained.

CASE 2.—S. H., white, aged 31 years, was admitted March 16, 1900, complaining of abdominal pain. The past history was negative, the menses normal until her present illness, since the beginning of which they have been quite irregular, ocurring every two or three weeks, with the flow increased in amount. Married four years, she has one child aged 2 years. Labor was instrumental, with laceration of the perineum. She has had no miscarriages.

Present Illness: This began two weeks after labor, two years previous to her admission to the hospital, the onset gradual, with dull aching pain in the left groin, with nausea, chills and fever. The abdomen was swollen at times, and at others she noticed a tumor. She became nervous, less in weight and strength, and suffered from constipation; no urinary disturbance. Leucorrhea, variable in amount and non-irritating, existed for three months prior to admission. Examination of the chest and abdomen was negative; no note of vaginal examination.

Operation: March 17, 1900 (Operator, Dr. Kelly), an abdominal (median) incision exposed a mass at the left pelvic brim adherent to the sigmoid and left round ligament. On freeing these, the mass was found densely adherent to the pelvic wall, broad ligament and side of the uterus. The latter lay on the pelvic floor posterior to the mass. The right tube and ovary were normal. The uterus was separated from the mass with the escape of a small quantity of pus. The entire top of the broad ligament was thickened and infiltrated. The tube was not involved. The tube and ovary were removed and the round ligament sutured over the raw area. In enucleation, a hole 1 cm. in diameter was torn in the rectum. This was sutured with two rows of catgut sutures. Closures of the abdominal wound was without drainage. Drawings showed an ovarian abscess. The relaxed vaginal outlet was repaired.

At 2 p. m., March 18, her temperature was 104 F., pulse 120, and leucocytes 22,000. She was slightly nauseated. The abdomen was reopened at this time and the peritoneum found slightly injected; the cavity contained a small amount of free fluid. The peritoneal cavity was irrigated. From this time until March 24, when she died, the patient showed the typical signs of general peritonitis, nausea, distension, constipation, rapid pulse, elevated temperature. Autopsy showed general suppurative peritonitis, much necrotic tissue about the seat of the old abscess. The sutures of the rectum had given way partially, there being a communication between the gut and abdominal cavity. There is no report of the bacteriologic examination at autopsy. In the bacteriologic examination at operation (Dr. Hunner), cultures and cover slips from pus showed streptococcus pyogenes.

Although no note was made of vaginal examination at least two had been made. The history, the unilateral situation of the mass, and its induration should have caused a correct diagnosis prior to operation, and after the incision had been made it was still possible to have avoided the infection of the general peritoneal cavity. While in this case it is impossible to say whether the cause of death was due to the streptococcus or to an infection from the intestine, yet the immediate rise of temperature and the presence of the streptococci capable of culture indicate that this micro-organism caused the original general peritonitis, and that the infection of the catgut sutures with which the gut had been closed had caused the sutures to give way.

Immediately following operation an enema of 300 c.c. of salt solution was given by mistake. This may have caused the giving way of the sutures. The exploratory operation by Dr. Kelly, on the day after the operation, made with this in mind, failed to reveal any defect in the suturing. The probability is that the death was caused by a general streptococcic peritonitis complicated by an invasion of bacteria and fecal material from the rectum. It is worthy of note that the primary infection, according to the history, was two years prior to admission.

CASE 3.—F. L., white, aged 20 years, was admitted June 10, 1900, complaining of pain in the abdomen. Her past history was negative, also menstrual history. She was unmarried, had one miscarriage at the sixth month, on May 18, 1900, and leucorrhea for one year, non-irritating and non-offensive.

Present Illness: This began with the miscarriage, which was produced by means of a bougie, the fetus expelled on the fourth day, preceded by chills and fever. She got up on the fifth day, after labor and had been working until May 31, when, after a misstep, she began to have pains in the left ovarian region. Since miscarriage she has had a bloody vaginal discharge. On May 31 her physician, who was then first called, noticed a swelling the size of an egg in the left side. She had night sweats with slight fever, but no chills. She felt weak and had lost in strength and weight. General condition: good color; coated tongue; constipated; no fever. The urine contained some pus and albumin.

Examination: Chest negative; abdomen slightly distended and in the left lower quadrant was a tender mass the size of the fist and immovable.

Vaginal Examination: Uterus in anteflexion, normal in size and fairly movable, the right tube and ovary normal. A hard irregular mass was felt in the left broad ligament, giving the characteristic induration of a parametritic exudate. The left tube and ovary were thought to be involved. A diagnosis of streptococcic parametritis was made in the ward.

Operation: June 11, 1900 (operator, Dr. Cullen), an incision parallel to Poupart's ligament toward its outer end and 2 cm. above it was made, with blunt dissection, avoiding entering the peritoneal cavity. On reaching the base of the broad ligament an abscess containing two ounces of brownish pus was evacuated, and the indurated tissue explored. In doing so it was thought that the peritoneal cavity had been entered, so an exploratory incision was made. It was now found that the peritoneal cavity had not been invaded. Both tubes and ovaries were normal. The abdominal incision was closed and protected, the other incision drained. The patient made an uninterrupted recovery, and was discharged perfectly well. At the bacteriological examination (Dr. Hunner), cultures and coverslips from pus showed the streptococcus pyogenes.

The history, the situation, the consistency of the mass, and its relation to the uterus and pelvic wall all indicated the nature of the infection, and the correct diagnosis probably saved the patient from a general peritonitis of streptococcic origin.

CASE 4.—M. K., white, aged 38 years, was admitted Aug. 18, 1900, complaining of fever. Her family and past histories were negative, her menstrual history also. She had been married twenty years, with eight children, two miscarriages, the oldest child 19 years old, the youngest 12 days, but no trouble with any labor or miscarriage until the last labor. Leucorrhea was slight, non-irritating, and non-offensive.

Present Illness: This began one day after labor, twelve days prior to her admission, with fever—temperature 105 F.—and chills. The labor was normal, except that the attending physician delivered the secundines. With the fever was abdominal distension and griping abdominal pains. The distension soon subsided. Her general condition on admission showed no abdominal tenderness; the tongue was red and coated, appetite poor, slight nausea, cough, the patient of spare build, and pale, the mucous membrane of a good color.

Examination: Chest negative, except a few râles at the base of the right lung; abdomen full and soft, and, occupying its middle lower portion, was a rounded mass rising half-way to the umbilicus. The vaginal outlet was considerably relaxed with slight cystocele and rectocele. The fundus of the uterus was represented by a rounded irregular mass lying to the right of the median line and rising half-way to the umbilicus. The spleen was slightly enlarged. She was given hot boric acid douches, was kept in bed and ran an irregular temperature of 99 F. to 102 F. There was slight distension at times, and she had pains in the left groin. Her pulse was 90 to 100. Examination, August 31, showed marked tenderness in the left inguinal region, and palpation showed a small mass here: September 3, irregular masses were felt on both sides of the uterus. She at this date had a temperature of 103 F., and a leucocytosis of 48,000.

Operation: Sept. 6, 1900 (operator, Dr. Hunner), a median long incision was made, and the peritoneum found much congested and thickened. The omentum was plastered over the sigmoid, which was in turn firmly adherent to the left tube and ovary. The omentum was easily detached. The sigmoid was freed with considerable care and difficulty. Pus escaped from the left tube as the sigmoid was detached. The right tube was a pyosalpinx. The uterus, tubes and ovaries were enucleated. Three abscesses were found in the left broad ligament, one in its outer portion, another under the round ligament near the inguinal ring, and the third at the uterine base of the broad ligament. Each measured 2 to 3 cm. in diameter. The cervix was split and the pelvis well drained by gauze, some of which emerged from the lower angle of the abdominal wound and the remainder through the cervix. The patient made rather a tedious convalescense. She developed a pleurisy which finally cleared up and she was discharged Oct. 22, 1900, well. At the bacteriologic examination, the streptococcus pyogenes was found by microscopic examination, in the abscess, and grown on the various media. The same micro-organisms were found at various times during the convalescence, in the granulating wound.

This patient had in addition to the purulent parametritis a double pyosalpinx, and it is the only one of our patients who showed this condition. This rendered a hystero-salpingo-oöphorectomy necessary. The diagnosis of a streptococcus infection had been made from the history and was partially confirmed by finding the abscesses in the broad ligament. Consequently extreme care was used throughout the operation to protect the general peritoneal cavity, and to this and the free drainage the patient owed her recovery.

In considering in this article cases of streptococcus infections I have dealt only with those of pelvic inflammation. As the large majority of these infections, having their origin in the genitalia of women, occur at labor or miscarriage, the general question of puerperal infections due to this micro-organism belongs more strictly to the obstetrician. There are, however, a class of cases which belong strictly to gynecology, and to these I have confined my attention. Since the introduction of aseptic midwifery cases of parametritis have become comparatively rare, yet every obstetrician and gynecologist will occasionally meet with this affection. Certainly the large majority of them are due to the streptococcus pyogenes, which micro-organism has, however, the faculty of causing lesions in the pelvis which can not be classed under this head. Again, not all cases of parametritis are due to the streptococcus. I have endeavored then to call attention to the characteristic signs by which the diagnosis of streptococcic pelvic infections which have extended beyond the uterus and which have not caused a general peritonitis or systemic infection can be made, and to the principles of operation.

MENIERE'S DISEASE WITH REPORT OF A CASE.

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In 1861 Ménière published, in the *Gazette Médicale de Paris*, a description of a group of symptoms which thereafter, when noted, received the name of Ménière's disease. The symptoms in general were progressive deafness, varyingly constant vertigo, tinnitus aurium and gastric disturbances. Since then cases have been reported at times on both sides of the Atlantic, but principally in Europe, and pathologic investigations have been made. The result, however, has been more or less discordant, principally in admission of a distinct disease with symptoms as described, and additionally in the exact nature and location of the lesion or lesions.

Thus Burnett[1] denounces the name of Ménière's disease as unjust and unscientific, defending his assertions by the fact that Flourens, in 1822, and Deleau,[2] in 1836, described aural vertigo more accurately than Ménière in 1861, Deleau being especially entitled to credit, as he located the disease in the middle ear. Furthermore, he says that the lesion in cases of aural vertigo with tinnitus and deafness has been found in his experience to be in the middle ear and relieved by removal of the incus and stapes. Again Eckert,[3] in summing up his conclusions based on cases published up to the time of his writing, leans to the idea that the lesion is located mainly in the semicircular canals and depends principally upon a diseased state of the terminal apparatus of the acoustic nerve. Hughlings Jackson[4] has found that hemorrhage frequently causes the symptoms. Ferrier[5] believes that the lesion is irritative and located in one or more of the semicircular canals, the direction of the falls during an attack depending on the canal affected. Buzzard,[6] on the other hand, thinks that the paroxysmal nature of the vertigo precludes

the probability of any structural lesion in the canals. Knapp[7] regards the deafness for musical sounds in some cases as proof that the disease extends to the cochlea.

Regarding Burnett, it is apparent that he has confused —and the confusion is shared by many—the deafness, tinnitus and vertigo so often seen in cases of chronic middle ear affections, with the clear, orderly, typical train of symptoms in Ménières disease. And the men to whom he would award the palm of priority have simply described these symptoms and not those properly classified under the name of Ménière's disease. The investigations of the other men mentioned, together with the more modern researches, point unmistakably to the labyrinth as the seat of the lesion irrespective of what part of the labyrinth may be involved.

That the semicircular canals are involved seems from their physiology to be reasonably certain. They are essential in the function of equilibration. The pressure of the endolymph upon the terminals of the auditory nerve produces an irritation of its filaments; the impression being transmitted from there by the nerves to their centers. If pressure be made on the round window, dizziness and an inclination to fall backward are produced by the transmitted pressure upon the ampulla of the posterior canal. Pressure upon the footplate of the stapes produces a rocking of the head from side to side through pressure transmitted to the superior canal and ampulla. The horizontal canal, owing to its location, can not have pressure exerted upon it. When strong pressure is made upon the fluid within the vestibule, simple vertigo results.

These physiologic facts easily account for the dizziness and tinnitus in middle ear affections, immobilizing the stapes in the round window either by direct impaction of the foot-plate or by pressure upon it from the incus. However, that this impression made upon the end filaments of the nerve by pressure, can not also be caused by a changed state of the filaments themselves is altogether untenable and not supported by pathologic investigation nor clinical facts.

Burnett[8] has recently again reported the results of twenty-seven operations for removal of the stapes, which in every case gave relief. The cases being, as surmised of his previous ones, not true Ménières disease, but probably otitis media, purulent and non-purulent forms.

Etiology.—Regarding the etiology of true Ménière's disease, age above 30 and the male sex seem to be factors. Syphilis and the rheumatic diathesis are probably the most frequent direct causes. Exposure, senile changes, blood changes as leukemia[9] and simple anemia, hemorrhages, traumatic[10] or idiopathic, serous effusions,[11] cerebral disturbances,[12] parotitis and influenza frequently factor directly in the causation. This list necessarily forecasts the pathology which is chiefly inflammatory with or without hemorrhages but, as far as can be learned, without the formation of pus. There is much obscurity as to the pathology and more work must be done to clear it up.

Symptomatology.—The symptoms are grouped about four cardinals, viz., vertigo, tinnitus aurium, progressive deafness and gastric disturbances. Vertigo appears first in the majority of cases, concurring in others with the tinnitus and deafness. These always follow a parallel course. Beginning usually in one ear they increase in severity for a time, remit, increase again and finally subside partially while the other side becomes affected. The tinnitus gradually grows worse till it finally ceases in one ear and then in the other, complete deafness marking its cessation.

The deafness and tinnitus may be bilateral and appear suddenly, as illustrated in the classic case of Ménière, where a young girl having exposed herself during menstruation was seized suddenly with vomiting, vertigo, bilateral deafness and tinnitus, and died on the fifth day, the autopsy revealing a serous hemorrhagic fluid in the semicircular canals.

The vertigo begins usually with slight and transient attacks having a tendency to progress in severity, but following no definite interval in their recurrence, excepting that in the later stages the intervals are shortened. They may vary from one attack a month to four or five a day. Seemingly they are aggravated by overwork, sudden movements of the head, turning in bed, blowing of the nose, indiscretion in diet, constipation, excitement and changes in the weather. In character they show a great diversity in the same individual as well as in different cases. They may begin with a sensation of rotation or slanting of the head. There is a tendency to walk toward the side affected or fall toward that side in the paroxysm. Often the vertigo is a simple swimming of the head which may be subjective or objective: Subjective if the patient feels himself turning, objective if his surroundings revolve about him. During a paroxysm the vertigo increases, the tinnitus becomes loud and roaring or shrieking. The patient begins to fall and seeks support until the sensations abate. Consciousness is usually present in the attack and voices can be distinguished and understood. In the severer attacks consciousness may be wholly or nearly abolished. Total loss of consciousness is rare.

The onset, duration and course of the symptoms are in a great measure dependent on the etiology. Systemic influences produce a long course with gradual onset. Hemorrhages and traumatism, acute infectious processes and some forms of rapid syphilis produce a more or less sudden with a subsequent shorter course.

Gastric disturbances manifest themselves during the attack of vertigo. There is a feeling of wretchedness and nausea which ends in vomiting very much like an ordinary bilious attack. During the interval the stomach appears well in most cases, but a tendency to constipation is marked and presents an important consideration in the successful treatment of the disease.

Besides these symptoms, nystagmus, volitional tremor, loss of memory and weakness of the extremities are also noted. Nystagmus has been observed by Hughlings Jackson, Gruber and Jacobson. It is present with the nervous symptoms. Loss of memory and weakness are most marked in senile and rheumatic cases.

Recognition of the Affection.—The disease, owing to its anatomical location, is not well understood at the present time. Enough of evidence, however, is in to justify the opinion that Ménière's is a disease by itself, although rarer than supposed. Aural vertigo is a general term of which Ménière's disease is a particular form. It is a disease involving the terminal filaments of the acoustic nerve in the labyrinth, and follows a definite course tending to end in deafness. Pathologic changes in the middle ear may cause, in part, similar symptoms having, however, dissimilar sequence, course, termination and pathology. Besides this, Ménière's disease yields to non-surgical treatment in most of those cases in which the cause is ascertainable.

To differentiate it from middle ear disease with vertigo it should be remembered that this affection in its purulent form is accompanied by a discharge, has visible

lesions and a differentiating history. Besides this the tests of Gelle and Bing may aid in diagnosis. From epilepsy the incomplete loss of consciousness, the continuing of vertigo after the paroxysm and the loss of hearing make Ménière's disease easily distinguishable.

CASE.—In August, 1900, I was called to see Fernando M., aged 67, who was suffering from a so-called bilious attack. In attending him his relatives related the occurrence of similar attacks and gave me a partial history of apoplexy. Being dissatisfied with the correctness of the diagnosis I was requested to call and make an examination, which I did the following day. By that time the patient had entirely recovered from his attack, appeared well nourished, had good color and, as he stated, an excellent appetite. I solicited the following history: Twelve years ago he was taken sick with a rheumatic attack which recurred frequently until six years ago when, during one of these attacks, he had an apoplectic stroke, or an attack diagnosed as such at the time. The attack consisted of a sudden and almost complete loss of consciousness, which came on while he was sitting at the table eating supper. Dizziness ushered in the attack and noises in the ear were loud. No paralysis followed, and in two days he practically recovered, save for an inability to use his tongue as heretofore; it seeming thick and difficult to move, though mobility was possible. Sense of taste was not impaired. The tongue symptom gradually disappeared, but a year later he noticed a sensation of cold from his hips down, on both sides. His rheumatic attacks were located chiefly in the great toes of both feet and now there was a dull heavy sensation near the insertion of the gluteal muscles, which became more pronounced after walking or other exertion. Preceding this attack he had what he termed a nervous spell consisting of a general prostration during which he cried very much without cause; after this his feelings were greatly relieved. Similar emotional disturbances occur at the present time. Jokes and stories calculated to arouse his risibilities have just the opposite effect, and the very best humorous efforts of his friends have been followed with a profusion of tears.

Another rheumatic attack followed soon after, again located in the great toe. The patient continued with a sensation of cold and pain in the right hip, until two years ago, when he had the first attack of vomiting very similar to the one which I saw. Up to the present time he has had only two other attacks of vomiting. But at least once a month attacks of nightmare with partial unconsciousness occur, during which he sees various scenes of past life and from which it is difficult to arouse him.

The ear symptoms proper began three years ago, when he noticed a swelling and hyperesthesia about the tragus of the left ear. When he would touch this area a tingling sensation coursed over the skin and through the deeper structures, setting up a dizziness which causes him to fall unless supported. This sensation gradually diminished until it is now nearly absent. It never appeared on the right side. Eight months ago deafness and tinnitus first began in the left ear. There was never any discharge. No lesions are visible. Four months later the right ear became affected, the left getting better at the same time. The tinnitus was then confined to both sides, simulating the shrieking of a steam whistle, at other times the rushing of a swift stream about some obstacle; again, in listening for the ticking of a watch an imaginary ticking would be heard all day. Constipation was marked. He complained of his legs being cold and kept them wrapped with blankets which at times seemed insufficient in quadruple thickness. Weakness and vertigo prevented him from walking more than thirty yards at a time, when he would rest, after which a similar distance could be traversed. An inability to write began five years ago. It consisted of a volitional tremor, becoming coarser and more violent with increased effort. When at rest the hand is perfectly quiet. The left hand is unaffected and serves the offices of the right. His reflexes are normal. This was the condition of the patient August 24. On the 26th he was placed on potassium bromid and hyoscin hydrobromate, 7 and 1/200 grains respectively three time daily. He continued this treatment until the end of September without any beneficial results, and was then placed on salicylic acid and potassium acetate, 10 and 5 grains respectively three times daily. From that time on he gradually improved. The improvement showed itself in the cessation of the tinnitus in the left ear, with marked improvement in the hearing of the same ear. The right ear, which at the beginning of treatment was totally deaf to the ticking of a watch, has heard this sound twice within the last week and the tinnitus in that ear has abated and changed location, being situated higher up near the anterior portion of the parietal bone.

No vomiting has occurred, and last week the patient was able to walk to my office and return to his home without discomfort and without a showing of vertigo. This distance one way is about one hundred and fifty yards.

Pilocarpin injections were used a week after the beginning of the salicylate treatment, but were abandoned on account of the great discomfort and little benefit they caused.

The patient, though improved, is not wholly cured, but the indications for a favorable progression are very good. The result will be subject to another report.

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THE FINANCIAL RELATIONS OF THE MEDICAL PROFESSION TO THE PEOPLE AND PUBLIC.*

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PANA, ILL.

Medical men show more financial failures, when judged from a commercial point of view, than any other class, but this is not because the members of the medical profession are incompetent men, or do not earn a living, but because they have inherited a faulty system of doing business. Years ago, when the good old family doctor was in vogue, of which Ian Maclaren's "Willum M'Clure" is the type, the physician did not expect to lay up a store for his old age or the comfort of his family, but when his life's work was done, to be laid to rest by his neighbors.

* Read before the Semi-annual Meeting of the District Medical Society of Central Illinois, held in Pana, Oct. 30, 1900.

The time has come for a radical change in our methods. In the days before the rapid shifting of the population the shiftless methods of our fathers may have worked well enough, but now, when such frequent changes are taking place in the abode of our patrons, and ideal, honest manhood is so scarce, we are necessarily obliged to look more carefully after the collection of our accounts. But how many have any regularity about presenting these? How many refuse to treat the well-known deadbeats? It is easy to find those who say they do not treat this kind of people, but their goodness of heart, or some other cause, induces them to render them the desired service, for many are afraid to say "no" to these people for fear of hurting the feelings of some of their friends or relatives who may have given patronage in the past or who might otherwise do so in the future. This does not apply to the worthy poor, and I would not close my eyes to appeals for help in times of distress, for physicians must treat this class, found in every neighborhood. Christ said: "The poor ye have with you always," and I am not trying to fortify your hearts against such. Boerhaave said the poor were his best paying patrons, for God paid him for treating them. It has also been said that no medical man ever rose to eminence in the profession who refused attendance on the worthy and honest poor.

My desire is that a free and full discussion may be had on the following points: 1. There should be a better fraternal spirit in our dealings and associations with one another, so that we will consider ourselves friends and not rivals in medical practice. 2. A uniform fee-bill should be established, and this should be rigidly lived up to. 3. Companies and corporations should guarantee payment of bills rendered for services to their employees when injured while at work for them. 4. We should demand of the public authorities a just recognition in public affairs and a just compensation for our services.

The members of the medical profession have been imposed on, both by the people at large and by the public authorities, and are not receiving the just remuneration for services or the due respect from the public that they deserve. But the members themselves are almost wholly to blame for this state of affairs. If we had more of the spirit of Dumas' famous three guardsmen we would be far better off, i. e., "One for all and all for one." We should make ourselves felt as a united body, demanding our rights as one man in the voice of the whole profession, when we ask for anything of our lawmakers or of others. If we would make ourselves heard by united effort we could have almost anything we might ask for that is reasonable. Our inharmonious condition is due to lack of organization, and in consequence the profession does not receive that respect which it would if its members were well organized into an association controlled for the benefit of the whole; and in working for the profession at large each individual member would be helped financially and elevated to a higher plane of usefulness. As to our present condition, it is very little better now than it was many years ago, but who is to blame for it but ourselves? Every walk of life but that of medicine is represented in the names recently chosen for the Hall of Fame. Then let us consider this omission of the names of the great benefactors of the whole human race, like Morton, the discoverer of anesthesia, and McDowell, the great pioneer of abdominal surgery, and of Sims, the immortal gynecologist, ask ourselves the reason for it. The answer is: Because we are not united in a harmonious body, and so accomplish little or nothing, while we continue to wonder why we are not recognized according to worth as other men progress.

The physicians of every community should organize an association for mutual protection, and each individual physician in that place who is recognized by the state board of health should be a member. Then the first thing should be the establishing of a fee-bill to govern the charges in that community, and next a list of the dead-beats should be made for the information of members. The fee-bill should be the standard for all charges, and when a charge is made it should be the one agreed on. If attendance is rendered the worthy poor, it may be for charity, but let the charges be made in good faith and lived up to. A fee-bill would be of inestimable help in settling with the chronic hagglers, and would soon educate the community as to what a fair charge is.

Another cause of complaint on the part of physicians is the habit of companies and corporations employing laborers who are often injured while at work, and expecting to have them treated by physicians who are given no assurance of pay by the firms employing the men. The employee is severely injured and laid up at home with increased household expenses consequent on his misfortune, and after he has returned to work he is so in debt that the physician is unable to get anything for months or years, and often never. If physicians were properly organized they could compel employers to see that they received their pay, but individually they have not the power to enforce this. I have had abundance of sad experience on this line, and have in vain sought redress. I also tried to get the local physicians to enter into an agreement to notify the employers, in this place, that we would hold them responsible for our fees in such cases, but some refused to sign. In these cases the physician in attendance well knows that it is utterly impossible for the head of the family to pay anything; in fact, he is more conscious of the necessity of giving the distressed family something out of his own scant pocketbook than rendering his bill, but the grocer and other creditors who have not seen the hardships of the family push their bills and collect them, while the doctor does not push his, and finally loses the entire amount.

Still another cause of complaint is the way that physicians are discriminated against by the public authorities. The county boards of supervisors have for years cut the bills sent them by physicians, after being ordered by their respective supervisors and duly sworn to, for treating paupers. While the patient treated may be a pauper, surely the state is not.

Again, when it comes to the settlement of estates, physicians' claims are not allowed by county judges until about the last thing. After the bills of the tailor, the undertaker, etc., are allowed, the physician comes in for his share "for treatment in a last illness." It often happens that a physician treats a patient for weeks and perhaps many months in a last illness, and when the family is convinced that there is no hope of recovery there is a change of doctors in order to get rid of paying the one who has stood by them in their long struggle.

About in the same category as the county pauper practice should be placed the new innovation, at least new for the small cities and villages, the so-called "club practice." A sick benefit society is formed, as I understand it, in a place, and contract with a physician for a small fee, a mere pittance, for stated services, to attend at the beck and call of the members who may need medical service. It generally happens that the most of the members of these societies or clubs are the prospective

fathers of soon-to-be-larger families, and desire attendance on their wives for a mere pittance as compared to what would be charged, and ought to be, for taking care of a case of confinement in the regular order of practice.

It is now time for the medical profession to form protective associations, so as to work together on all the lines which I have mentioned, and the one that I am in favor of forming first is one for the weeding out of dead-beats, and the devising of ways and means for the better collection of our just debts. Every kind of employment or profession has an organization for the better protection of its members except that of medicine, but there is a faint ray of hope, for the physicians in one or two cities and a county have begun the work and it is bearing good fruit. Physicians in Detroit, Mich., have formed the "Detroit Physicians' Business Association," and those of Murphysboro, Jackson County, Illinois, have formed "The Physicians' Protective Association." I have a letter from Dr. O. M. Ormsby, the secretary of the latter, saying that the physicians down there are well pleased with its workings and are collecting their debts thereby, and, what is of more importance, if possible, they are running their own business and have made themselves known and felt as a power in the affairs of their county in the matter of pauper practice, establishing fees and abating the nuisance of dead-beats and their class.

A STUDY OF THE ETIOLOGY AND PATHOLOGY OF RHEUMATISM WITH SPECIAL REFERENCE TO "RHEUMATIC DIATHESIS."*

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DES MOINES, IOWA.

The term "diathesis" has so little to commend its use in the scientific terminology of medicine that it is fast falling into disrepute. Indeed, it would seem that it is destined, sooner or later, to lose its place in medical nomenclature along with the "humors" of Galen. In view of the ambiguity of the term then, I will define diathesis as that hereditary condition of the body organism which appears to be present as a necessary initial factor in the production of the disease.

The disease which we ordinarily call rheumatism is only one manifested form of this malady. Indeed, there appear to be many varied conditions of rheumatism. Thus we may speak of rheumatism in a plural sense, in that it does not appear to exist as a single entity. It should be understood, however, that this construction is but a temporary one, and that, when we shall have solved the etiologic problem of their production, the diseases now placed outside this category, but which seem from their symptomatology to have a direct connection with acute articular rheumatism, will take their proper place in the nosology of diseases.

PART PLAYED BY DIATHESIS.

To what extent does so-called diathesis affect the etiology and pathology, and what may be implied by the term in connection with rheumatism? If we were able to explain the intricate problems of normal metabolism, if we could trace by any known chemico-physiologic law, the synthetic and analytic structure of the cell, and define the phenomena of life and death of protoplasmic mass, we might be in a position better to explain the enigma of constitutional vices. That they exist as a predisposing factor in the causation of diseases, as well as an inhibitory factor in the repair of the disease conditions, can scarcely be denied. They have been variously described under the names diathesis, dyscrasia, predisposition, disposition, etc. Under the name of diathesis it has been taught that the inclination is an inherited one, and this has been recognized since the early history of medical science. The literal meaning of diathesis, when applied to the chemistry of the body, is that there is a tendency on the part of the animal economy to the development of certain diseases; by this it is not meant that the disease itself, but rather the family tendency to it, is transmitted. It need not strain a point to say that the condition may be an acquired one.

OTHER FACTORS IN THE CAUSATION OF RHEUMATISM.

This brings us to the consideration of some of the other factors said to enter into the causation of rheumatism. It was long thought, and is even held at the present day by some authorities, notably by Haig, that uric acid, retained in abnormal quantities within the system, was the cause of rheumatism and gout. That uric acid or its salts exist as a pathologic condition is undoubtedly true, but it would seem almost preposterous to conclude, from this fact alone, that it is per se the cause of these phenomena. It is by no means well attested that uric acid or its salts are constantly present in the blood stream even in well-defined cases. By a liberal perusal of recent literature I find the consensus of opinion of the best authorities to be that rheumatism is directly due to bacterial infection. Indeed, there is a strong tendency among bacteriologists to associate the infectious germ with all pathologic problems, and this association has in a measure been verified. Yet we are unable by this theory alone to explain many of the special and characteristic features of diseases, and especially have we found it so in the diseases under consideration. It would be to my mind more plausible to conclude that a relation exists between the biology of the infectious agent of rheumatism and uric acid formation, and that the presence of uric acid depends on the development of these germs. Diathesis, then, would appear to bear much the same relationship to rheumatism and gout, as so-called predisposition or dyscrasia does to other diseases which are not particularly hereditary in nature; as, for instance, tuberculosis, typhoid fever, malaria, etc. In other words, diathesis defines the conditions under which infection takes place.

In a paper published in the *American Medico-Surgical Bulletin* (1895), and recently republished,[1] Dr. Wm. H. Porter called attention to defective oxidation on the part of the system as the chief predisposing factor in bringing about the disease. He assumes that in the "so-called lactic or rheumatic condition as in the so-called uric acid or gouty state of the system, all the toxic products within the system, and all the abnormal products found in the excreta, are due to the imperfect oxidation reduction, or faulty isomeric transformation of the proteid constituents contained in the animal economy; that the carbohydrates if taken in ordinate quantities being easily oxidized is done so at the expense of the proteid constituents; thus producing suboxidation of the latter." He undertakes to disprove the existence of uric acid or its salts in the blood stream, and erect the hypothesis "that as a result of faulty nutrition there is developed an imperfect and abnormal transmutation of the proteid compounds, that as a result the substances are oxidized at an abnormal position instead of in the renal cells as normally occur." However, he goes further than to merely assume that

* Read before the Des Moines Pathological Society, Oct. 23, 1900.

suboxidation of the proteid constituents act alone as the only element in producing the disorders, and concludes that micro-organisms may in a measure be responsible, or rather that they so affect the food products in the alimentary canal, that they become abnormally oxidized in the cell protoplasm. By this ingenious theory he is able to explain, at least to his own satisfaction, all the different forms and types of the so-called rheumatic affections seen clinically. Each variety of infection he assumes to be due to its peculiar means of suboxidation, whether this be produced by a special bacteria or a combination of micro-organisms, or even, perchance, to a lack of micro-organisms in the alimentary canal. He assumes here that certain forms of micro-organisms are essential to proper digestion. He goes so far as to say that it seems quite probable that many of the toxic products are simply isomeric forms of the normal proteid molecule; he freely admits, however, the difficulty of isolation and proofs of this latter hypothesis. Thus the difference between this theory and the one usually accepted, relating to micro-organisms as the etiologic factor, is that the latter theory assumes that the infectious germ is carried by the blood current to remote sites, as cartilages and joints, for instance, where it deposits its germinal vesicle, which enters the system and completes another biologic cycle, ending again in a fully-developed bacillus.

The suboxidation theory, however, seems to have few supporters; indeed, it is absolutely at variance with modern accepted views as to the formation of uric acid. It would intrude upon the purposes of this paper to enter into a full discussion of the chemistry of uric acid, yet it would be incomplete without mentioning the researches of Harbaczewski,[2] Kossel, and others who have shown that uric acid is not derived from metabolism of the general proteid mass, but from nuclein; that is, it is the specific end-product of the nucleins contained in the nuclein of cells, and eliminated only when nuclein is broken up in the process of destructive metabolism. From this, then, we are led to believe that the rheumatic process is accompanied by increased metabolic activity, instead of suboxidation, which would signify a decrease, or a submetabolism.

It may not prove amiss here to touch upon the atavistic possibilities in connection with the production of uric acid diathesis. Much work is being done in this country and abroad just now in biologic research; and the literature along these lines is taking its place alongside of recognized scientific investigations. It is too much for us to say at the present time that it is probable that the ontology of the human animal will ever be satisfactorily worked out; but it is possible to draw the logical conclusion that many pathologic conditions are traceable to ancestral defect, far removed from any forms of life now known to exist. If uric acid is found in man only as a pathologic condition, may it not go to prove that this in an inclination or a partial reversion to the reptilian type in the metabolism of the cells? It is well known that the urine of the fetus and newly-born child contains an abundance of uric acid, and no one has to my knowledge attempted to explain the phenomenon. However, to those who have studied pathologic phenomena from this point of view, this fact alone offers strong confirmatory evidence of its having been a purely physiologic excretory product of our progenitors. Uric acid is a lower oxidation product than urea, but it must not be understood by this that uric acid is a precursor of urea; indeed, it is as much of an end-product of proteid digestion as urea. It appears as a trace in urine under normal conditions, but it is so inconstant in its relations to urea that it may be said to resemble a vicarious product, having more the appearance of a progenic relic than the result of a well-defined physiologic function. Just why uric acid is the final excretory product in reptiles and birds, and urea as much the final product in man, is one of the unsolved problems of nature; but that the elements of normal metabolism in the avian or reptilian type are present in man only as a well-defined pathologic condition, is a well-established fact. With the same degree of reason we may propound the question: Why does destructive proteid metabolism stop short of ammonia, carbon dioxid and water, in either case? This leads to the question: To what extent, then, is the rheumatic condition inherited? It must not be forgotten that when the rheumatic condition is mentioned, it refers to all the allied group, gout included; for even though there is a great dissimilarity in the two conditions, I am constrained to believe that when we come to know more of the two diseases, it will be seen that they bear to each other a closer relationship than they are credited with at the present day. A careful examination of the literature on rheumatism in infancy would lead us to believe it exceedingly rare. Cheadle[3] makes mention of two patients, one 4 weeks, and the other 23 days old, who were affected with acute rheumatism. In the second edition of his text-book on medicine, Strümpell reports one case which he met in Leipsic. R. Abrahams[4] mentions two other cases, and reports three of his own, all in infants at birth. The first case resulted lethally on the eighth day. In the second recovery was apparently complete after six months' treatment with salicylates. Endocarditis was present in all three of the cases, and joint symptoms were difficult to make out. There was a decided rheumatic history in the mothers, and two of them had acute rheumatic fever at, or just prior to, the birth of the child. Joint symptoms in infancy, if present at all, are not apt to be detected; but on the other hand the heart appears to bear the brunt of the disease. Endocarditis is seldom present in the adult, except as a result of acute rheumatism or other rheumatic affections, and in infancy and in childhood it appears to hold true even to a greater extent. This brings us face to face with another question—that which relates to fetal life. Endocarditis has been discovered in many instances in the still-born child, and to my knowledge scarcely has an effort been made by clinicians to ascribe a cause; but since we have learned more of the true nature of the infection and its pathogenic predilection for the heart membrane, I would ask: Would it be a fantastic conclusion to say that rheumatic infection in the mother may be transferred to the fetus *in utero*, thereby causing its death? It has been proved that the heart is the target in infantile rheumatism, and this leads us to believe that there is a close relationship between chorea and rheumatism. Out of seventy-three autopsies collected by Osler,[5] in deaths occurring from chorea[6] sixty-two had well-defined endocarditis. In the same article he traces a direct rheumatic history in about 21 per cent. Cheadle[6] finds that 65 per cent. of his cases give a definite rheumatic family history. Tonsillitis is often found to be associated with rheumatic symptoms, and some authorities have thought the tonsils one of the hiati through which infection takes place. Frederick A. Packard[7] has recently reported five cases of endocarditis following tonsillitis. His paper is well worth

a careful perusal, for tonsillitis as a cause of endocarditis is rarely mentioned in text-books. The connection between scarlet fever and rheumatism has been the subject of much discussion. It is thought by many that an etiologic relation exists between them. The erythemata are said to have a similar connection, and so has purpura.

PATHOLOGY.

From the foregoing it will be seen that the true pathology remains yet to be written. The existence of free uric acid or its salts in the blood stream is seriously questioned. They nevertheless do exist in the tissues in pathologic conditions. That the blood stream is the medium which carries the morbid agents to their various destinations in the body, there is no doubt. It is also true that the alkalinity of the blood is reduced, and at times it may very nearly approach acidity. There is a decreased number of red corpuscles, and they may transude through the capillary walls and produce ecchymoses. The blood has an abnormal tendency to clot, mostly on account of excess of fibrin. The urine is highly colored and has a high specific gravity. Uric acid is found in abundance, but there is little if any increase in the production of urea. The synovial fluid is abundant and of an acid reaction. The whole of the joint structure is more or less involved, and the articular surfaces become roughened. It is in the joint structures that the "battle royal" between the body cells and the infectious agents usually takes place. The latter, by a series of sorties, attack the system at one of the weakest points in its line of defense, and the debris of uric acid salts, the roughened cartilages, etc., tell the story of the great central conflict; while the abnormal vascularity and thickening around the joint structure point to the concomitant forage and skirmish actions, in the battle for supremacy between the body organism and the infectious agents of the disease. However, the infection may strike directly at the heart, producing none of the stereotyped symptoms of rheumatism except endocarditis. Among the conclusions I wish to draw from this study are: 1, that rheumatism is directly due to an infectious germ, and that the symptoms produced vary in accordance with the position and attenuation of these germs; 2, that these germs may at times complicate other disease conditions, as for instance scarlet fever, thereby causing rheumatic symptoms; 3, that the nidus of the germs may be located in the joints, which is usually the case, especially in adults, or more rarely in the heart, and quite frequently in the muscles; 4, that the uric and lactic acid found in these cases, are products, rather than the cause, of the disease, and that, of themselves, their presence is not pathognomonic of gout and rheumatism, in that they simply show the result of katabolism of the body cells, which condition may be brought on by numerous nutritional disorders; 5, that hereditary tendency, if carefully sought out, may be found in a large majority of cases; 6, that gout and rheumatism, although very dissimilar diseases, each possesses so many traits in common that we have been led to place them in the same family of diatheses. Both produce the same end-products of tissue metamorphosis, their nidi of infection have much the same location, and the pathologic conditions found therein are closely related. There is a tendency to cutaneous disorders in both diseases. I must remark here, however, that not all of the symptomatology of the gouty state described in books should be taken for granted; for under this head authors have included almost every symptom to which our humanity is heir, from eczema to chronic gleet. True it is, they have all been found underlying gouty conditions, but there is nothing else to prove their relation to the gouty state. The difference between the gouty and the rheumatic subject is that one contains that special ingredient requisite to the propagation of the gouty poison, while that of the other harbors a rheumatic poison. I am of the opinion that both conditions are brought to the acute crisis by the agency of an infectious germ, the true biologic nature of which remains yet to be discovered. A further consideration of this part of this most interesting subject, however, would carry us far beyond the limits of this paper.

REPORT OF CASE.

Since the above was written, a case has been brought to my attention which so much engages the subject in hand that I can not forego the temptation to offer a brief report upon it. Not on account of its rarity, however, for it is such a one as is often seen and many times dismissed by the attending physician without serious consideration, if a physician's advice is even procured.

E. V., a girl 4 years of age, was brought to my office with the following symptoms: For two or three days she had suffered from a slight cold. Her head was much inclined to the left side, being slightly bent forward, and she was unable to rotate it upon the neck on account of pain. There was marked swelling of the muscles of the left side of the neck; slight pyrexia with an accelerated pulse. There was a history of "growing pains," and of rheumatic symptoms in the mother. The child played out of doors the next day, and on the third day had a slight rigor, and I was asked to see her again. I found the temperature at this time 101.5 F., and the pulse was much accelerated. I gave strict orders that the child be kept in doors and placed in bed. In the afternoon a symptom presented itself which served to alarm the parents more or less. The child, naturally somewhat nervous, became fidgety, and some of the muscles began to twitch, especially those of the lips and other facial muscles. The temperature being low, I was able to quiet the fears of the parents as to threatened "spasms," yet, indeed, I had graver fears of my own, lest genuine chorea might ensue. I accordingly ordered the dose of sodium salicylate which had been given from the onset, but in too moderate doses, increased to 20 grains a day. The temperature continued to rise for several hours until it reached 103.8 F.; by the next morning it was normal, and the heart's beat became slowly reduced from 130 per minute to 100, and even lower. She at no time would have been considered a seriously sick child. The appetite scarcely failed her, and no other symptoms were noted except that, on the fourth day, she complained of pains in the left arm and wrist. Upon examining the throat, I found the tonsils and pharynx somewhat inflamed. No complaint, however, had been made on account of this condition. It was difficult to make out any roughening of the heart's tone and, indeed, I do not believe there was any perceptible lesion present. I had little evidence on which to base my opinion, or rather fear, of threatened cardiac complication, except the rapidity of the pulse-rate—which is no proof at all—and the generally accepted opinion that rheumatism in childhood is prone to attack the heart. The diagnosis was carefully made by absolute exclusion; and considering the fact that, as soon as the increased doses of the salicylate began to take effect, the symptoms were brought promptly

under control, leaves little doubt in my mind as to the correctness of the diagnosis.

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A CASE OF ACUTE DERMATITIS CAUSED BY THE USE OF A HAIR-DYE HAVING FOR ITS BASE THE HYDROCHLORATE OF PARAPHENYLENE DIAMIN.

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On Jan. 30, 1901, Mrs. A. G., aged 44, married, a native of Venezuela, was referred to me by Dr. W. H. Haskin, suffering with a severe attack of dermatitis of the face, and a pruriginous, papulo-vesicular eruption on her arms and thighs. The forehead was swollen, red and shiny, with a few small vesicles near the margin of her hair. The eyelids, especially the upper, were puffy, the conjunctivæ slightly congested, the ears red and swollen; along the upper margins were numerous small vesicles filled with straw-colored fluid, which in places had exuded and formed granular crusts resembling "brown sugar." The nose and cheeks were slightly swollen. There was no eruption on the neck or chest, but the flexor and extensor surfaces of the forearms, and the anterior and inner sides of the thighs presented numerous small, slightly elevated papules, mostly perifollicular, and a few vesicles. The arms and legs were quite pruriginous at times. The face felt tense, uncomfortable, with some prickling sensations, especially marked in the eyes. The patient admitted having had a somewhat similar eruption at intervals during the past seven years, on her arms, legs and body. This eruption, diagnosed as an eczema, was always preceded by gastric and neurasthenic crises.

The distribution of the most intense phases of the eruption along the hair border and on the upper part of the ears suggested a closer examination of the hair; which, although very dark, showed signs of having been dyed in the temporal and frontal regions.

On questioning the patient, she admitted that for three weeks she had been using a French hair-dye; and a day or two after commencing its use she had experienced a prickling sensation in the eyes, followed by an intense inflammation of the entire face. This subsided to its present state.

This hair-dye dermatitis is well known at L'Hôpital Saint Louis, Paris, where it is very frequently met with in the out-patient clinic. Its zone-like distribution to the upper third of the face, the swollen eyelids, and the vesicles on the upper margins of the ear, give it an almost pathognomonic appearance, so much so that Fournier will frequently astonish the patient by saying: "Madame, you dye your hair; you use a dye composed of two liquids; you apply the dark liquid first and then the clear liquid." For such is the method of employing the hydrochlorate of paraphenylene diamin.

Cathelineau,[1] who made quite an exhaustive report on the accidents produced by the use of this dye, describes it as follows: The hydrochlorate of paraphenylene diamin is found in commerce in the form of red, mica-like scales, without appreciable odor; crystallizes at 102 C., melts at 140 degrees, boils at 260, distills at 267, is soluble in water, alcohol and ether. All oxidizing agents transform it into quinone. This transformation takes place slowly on exposure to air, almost instantly on addition of oxygenated water, or some other oxidizing agent.

Reactions: If to a liquid containing the paraphenylene diamin one adds a small quantity of its isomere in meta and the bichromate of potash, there is produced the blue of toluidin, whose intense blue color is characteristic. A few drops of a solution thrown on a filter-paper which has been saturated with oxygenated water gives a dark red color which rapidly becomes black. A few drops of a diluted solution of nitrate of potash gives with it a greenish-yellow color which becomes dark.

Preparation: To obtain the paraphenylene diamin, one separates from the paranitrilin which has been reduced by tin and hydrochloric acid, the reaction terminated, the tin is precipitated by hydrogen sulphid. The base is extracted by ether from the aqueous solution, rendered alkaline, purified by distillation and sublimation under a current of hydrogen.

Physiological effects: Paraphenylene diamin — $C_6H_4^2(NH_2)$—has been studied in its physiologic effects on dogs by Dubois and Vigum[2] (1898) who used the pure drug alone by hypodermic injections, while more recently (1901) Laborde and Meillère[3] have used the mixture as found in the dye, both by intravenous injections and subcutaneously. Their results agree in every point except the lungs, which the former found exsanguinated; the latter in a state of intense congestion. In doses of one decigram to a gram hypodermically administered to a dog, there was produced salivation, diarrhea and tenesmus, somnolence, difficulty of respiration, sneezing, coryza, abundant nasal discharge, hoarse voice, irritation of eyes, hyperesthesia of the conjunctivæ, with temperature falls, difficult gait, stiffness of the legs, opisthotonos, and death in twelve to twenty hours. The autopsy shows all the tissues darkly stained, the blood and muscles dark as "ink," the left ventricle in systole and empty, the liver brown to an almost violet tint. Mellière[4] also calls attention to the dark mahogany-colored urine found in his experiments and also in his patient whose case he reported. This was not found to be the case in our patient, whose urine was light amber, acid, 1030, urea .026 per cent., no sugar nor albumin, excess of chlorids.

Method of using: In commerce the dye is found in two solutions, No. 1 containing an aqueous or alcoholic solution of the hydrochlorate of paraphenylene diamin, No. 2 containing oxygenated water. The dyeing is effected in two processes. A few cubic centimeters of solution No. 1, on a brush or sponge, are passed over the hairs to be colored; after a few seconds, another brush or sponge wet with solution No. 2 is used. The effect is almost instantaneous. There is produced quinone—$C_8H_4O_2$—well known in organic chemistry, which gives off very irritating vapors at ordinary temperatures. The hair or beard has at first a violet tint which becomes darker under oxygenated water, by varying which tints varying from chataine to jet black may be obtained.

Clinical study: The seat of the eruption is almost always on the border of the hair, or upper lip in those who dye the mustache. The forehead, neck, ears, sometimes the entire face, the external surface of the arms, shoulders, back, even the entire body may be affected.

The eruption may come on after the first application, or not until after it has been used for months. Some subjects who do not have an eruption complain of a prickling sensation in the eyes for days after its use. The intense itching is another characteristic. This may be most marked in the scalp and is the usual precursor of the eruption, which appears as bright red placques, with irregular borders along the margins of hair. The skin becomes thickened and also stretched, and the placques disappear under pressure. The lids become swollen after a few days of itching. Under light desquamation the spots become pale and disappear, constituting the benign form. In the medium form, such as our case, with an eruption of bright red erythematous patches, with rare intervals of normal skin, the color does not disappear under pressure. In places there are urticarial elevations, papules, small vesicles filled with clear serum, or milky fluid; in places dried crusts, often yellow and impetiginous. The ears are swollen, the skin thickened, exuding serum where vesicles become broken. Itching may be so intense as to break sleep. There is slow return to normal, the skin remaining rough and edematous, desquamating for weeks.

Brocq,[5] in addition to the above light and medium forms, describes a third or grave form with violent erysipelatoid eruption, with fever, adenitis, extensive desquamation, etc. He mentions the case of a young American woman whose entire body desquamated, who had great depression and fever, with prolonged convalescence and tardy recovery. He recommends that in view of the increasing number and severity of these cases, the law should insist upon a label stating that this substance is "dangerous for all persons who have had eczema or who have irritable skins." G. Tissot[6] arrives at the conclusion that all hair dyes at present known are dangerous, that they may determine inflammatory or toxic accidents, and that it is necessary to regulate the sale, inasmuch as accidents are becoming more and more numerous as their use becomes generalized. The paraphenylene diamin he considers most constantly productive of accidents. Balzer[7] relates a case of an eczematous eruption produced by the irritation from a dye used in hose, which dye proved on chemical analysis to be the chlorate of paraphenylene diamin. The eruption came on twenty-four hours after wearing new hose, which were dyed black, with red, yellow, and green stripes. There was violent itching and the back of the foot presented typical lesions of acute eczema—small papulo-vesicular eruption, and diffuse redness not extending higher than the ankles. The soles of the feet, while presenting no eruption, itched intensely. It was curious to remark that the eruption was in bands corresponding to the black and green stripes; there was no eruption corresponding to the red and yellow stripes. The chemist reported that it was precisely the black and green portions where the coloring matter was the paraphenylene diamin.

Résumé: The duration of eruption may be from several days to several weeks. Sometimes exacerbations may occur when one thinks the patient nearly well. In the etiology one must always take into consideration, as in all chemical or medical eruptions, the personal predisposition or idiosyncrasy, and avoid in the treatment any application containing resorcin, which Laborde and Mellière[8] have shown often is used combined in the hair-dye, and under oxidizing influences becomes an irritating coloring product. The prognosis is in general good, but the patient should be warned against continuance of the dye for fear of the grave form described.

Differential diagnosis: Confusion might arise with acute eczema, especially where patients usually deny the use of a dye. Nevertheless, the suddenness of the manifestations, enormous swelling of the lids, the metamorphosis of the physiognomy are good guides.

Treatment: The usual calmative agents employed against erythematous eruptions due to external causes may be used. The hair must be sacrificed in the grave forms, as the dye in the hair still acts as an exciting cause. As a question to be studied there remains the query, does the eruption appear on the body from transferrence of the irritant by the hands, from nervous erethism, or it is absorbed in quantities sufficient to cause systemic effects?

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DIFFICULTIES AND DANGERS OF ANESTHETICS.

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Ever since the first deaths resulting from the administration of ether and chloroform, there has been considerable discussion as to the manner in which they cause them. One of the most important contributions was that of the Hyderabad Commission, which concluded from its experiments on animals that chloroform kills by its effects on the respiratory system. Mellish believes that it exerts its bad effects primarily upon the circulatory system, an opinion which is supported by Leonard Hill. Practically all observers agree that chloroform causes lowering of blood pressure at all stages of the anesthesia. Ether produces a slower fall than chloroform. Whether the paralysis of the respiratory precedes or follows that of the circulatory systems is of but little practical importance, for the interval between them is so slight as to be almost imperceptible. The writer has in some cases observed a cessation of respiration before that of the heart's action, and in others the reverse condition. Leonard Hill has shown that there are two kinds of syncope, a primary and secondary. The former occurs in the very earliest stages, the latter later. It may be due to fright or other psychic influences. In some cases there seems to be no apparent cause. Respiratory difficulties may be spasmodic, asphyxial or paralytic. The two former occur more frequently during ether than chloroform anesthesia. The last-named danger is far more frequent after chloroform. When this takes place, the respirations gradually become slower and more shallow, the color of the face and lips becomes grayish, the pulse imperceptible, and the pupils widely dilated.

The group of symptoms in which the heart first shows the effects of an overdose of the poison—secondary syncope—differs but slightly from the above, and the anesthetist who closely watches the respiration, color of face, pupil and pulse of the patient from the time the anesthetic is begun will note even slight danger signals quite early. It has been the habit of the writer, in his own cases and when instructing others, especially when chloroform is to be administered, to call attention to the following points: Remove all foreign bodies from the mouth, also all constricting neck or waist bands. Talk reassuringly to the patients, or divert their minds by having them count slowly up to fifty. Do not permit any loud talking or noise of preparations to be heard by the patient. Do not begin to remove dressings or prepare the field of operation before the stage of relaxation. Examine the heart, lungs and the urine before every anesthetic. (This will be referred to later.) Note the size of the pupils, the character of the pulse in regard to pressure and frequency, and watch both pulse and respiration, and the color of the face during the entire operation, keeping the hand on either radial, temporal or facial arteries, as the engineer does his hand upon the throttle. The writer has been able a number of times to guard against a syncope by noting the manner in which the pulse decreased in frequency and force. The pupil is at first dilated moderately, then somewhat contracted, responding, however, to light; but when it dilates again, or, in other words, the secondary dilatation occurs, with failure to respond to light, that is one of the earliest symptoms of syncope. The anesthetist should pay absolutely no attention to the operation, and should not be changed during it.

TREATMENT.

The curative treatment of the immediate difficulties and dangers in the milder forms, such as spasm of the glottis, is to remove the anesthetic—usually it is ether which causes this. Forceps of the kind used by the laryngologists, with pieces of cotton, will easily remove any mucus which has accumulated above the larynx and causes cyanosis. This is best done by placing the patient's head—if it has not previously been so—on its side directly upon the table. At times it is necessary to force the jaws apart with a special (Heister) gag. It is seldom necessary, if care is taken, to hold the jaw up and forward to use a tongue forceps. For the more severe forms of danger, such as sudden heart or respiratory failure, we should have some system or order in which the various methods or remedies shall be applied. The writer usually employs the following mechanical means first, for there can be but little object in giving cardiac stimulants before there is a circulation to carry them to the heart.

1. The method of König, or massage of the heart, I have employed eight times with startling results. This consists virtually, by a number of pushing movements with one or both hands over the heart in exciting a ventricular contraction, and thus preventing the paralytic dilatation of the heart from taking place. This method was first suggested by Professor König, and is but little known in this country. As soon as the heart or breathing has ceased, the operator, by rapid "punchings" with the flexor surface of the half-closed hand, without lifting the latter from the chest-wall, seeks to start up a contraction of the ventricles. I have saved three patients by this method alone during the past six months. It is really a shaking-up or massage of the heart. In a dog on which I performed a thoracotomy, the heart's action ceased as soon as the thorax was opened. The Konig method was employed, while one hand was kept over the heart—from the interior of the chest. The effect of this shaking-up of the heart through the external jolting was remarkable. The organ began to pulsate and continued to do so for several minutes.

2. The next method, and one which can be carried out simultaneously by another assistant, consists in mechanically exciting respiration by the so-called pharyngeal reflex, by making rhythmical tractions upon the tongue. (Laborde method.) Insert a tongue forceps and pull the organ, by its tip, out of the mouth as far as possible, about sixteen times a minute.

3. As soon as possible, raise the foot of the table, say 1½ to 2 feet, or bring the patient's head over the edge of the table, permitting it to hang down. At the same time, begin with artificial respiration. (After No. 1 has been employed.) Have two assistants—one on each side—bring a semiflexed arm down upon the lower portion of the chest, compressing this, then raising the arms above the head by extending them, and bringing them to the chest wall again.

4. By this time respiratory or circulatory paralysis will have either become permanent or temporary. If the latter, a few feeble pulsations can be felt and an occasional shallow breath be noticed. Now, an amyl nitrite pearl can be broken and its contents inhaled. Strychnin, 1/30 gr., and digitalin in 1/50 gr. doses can be given hypodermically; later whisky, atropin or ammonia.

5. Bleeding from a large vein, if the patient is plethoric, or the subcutaneous injection of a quart of normal—0.6 per cent.—salt solution, if there is any suspicion of a combination of syncope, with hemorrhage, is extremely valuable and rational.

6. Acupuncture of the heart has been tried as a last resort in two cases, by McArthur, with an encouraging result. Tracheotomy, stretching of the sphincter, irritation of the nostril, and electricity are of doubtful value.

To sum up: 1. Massage of the heart (Konig). 2. Rhythmical tractions of the tongue (Laborde). 3. Artificial respiration. 4. Cardiac stimulants. We should persist in our efforts, even in the most discouraging case, at least half an hour.

AFTER-EFFECTS.

In regard to some of the after-effects or dangers of anesthetics, many can be avoided by proper regard to their prevention. Before every anesthesia is begun the urine should be carefully examined for sugar, albumin and casts. This will only require a few moments, especially if a centrifugal apparatus is at hand, and may spare the operator a great deal of chagrin if a patient whose relatives he had assured that there was practically no danger should die within forty-eight hours of uremia. It has been shown conclusively by a number of investigators, both through experiments on animals and clinical observations, that both ether and chloroform have an injurious effect upon the renal parenchyma. My own observations on 110 cases about equally divided between chloroform and ether have been confirmed by a number of others. They were as follows: Ether and chloroform will cause albumin and casts in small amounts and number to appear after they have been administered to patients whose urine during repeated examinations was previously shown to be normal. This will occur more frequently after ether. Upon the diseased kidney it (ether) has a decidedly more harmful

action, causing in some cases acute suppression of urine, uremia and death. Chloroform, if administered during an operation or obstetrical case, as shown by Fraenkel, for a period of three hours or longer, may cause fatty degeneration of the renal cells and uremia. On the diseased kidney chloroform has a far milder action than ether, although occasionally a case of nephritis will be anesthetized with it and uremia follow, as in a case I observed a few weeks ago. Both, in cases of diabetes, will frequently increase enormously the sugar.

Another dangerous after-effect which can be avoided is pneumonia following ether anesthesia. A careful examination of the lungs will quickly aid us to diagnose a bronchitis or emphysema. Such persons bear ether poorly and should, if the heart permits, be anesthetized with chloroform. In regard to the latter organ, patients with heart trouble should be anesthetized either with ether or the A. C. E. mixture. In many hospitals abroad and in the East, the anesthetist is either a paid assistant, who remains for years, or is assigned to this task as an interne for many months. Slips are filled out for each anesthesia, stating the condition of the heart, lungs and kidneys before operation, etc. This is not impracticable even in small hospitals, and saves many a life.

CONCLUSIONS.

I have tried in the above to give a brief outline of the causes of syncope during anesthesia, their treatment, and some of the after-dangers or effects. Ether, with the exception of its bad effects upon the kidney, is by far the safest anesthetic. Chloroform kills quickly, ether slowly. The dangerous symptoms of the former are far less amenable to treatment than those of the latter. Children respond more quickly than adults to efforts at resuscitation.

A careful examination of patients is absolutely essential. In serious cases the urine should be collected for several days, and twenty-four hour specimens examined, especially in renal operations or laparotomies. Do not give one anesthetic, be it chloroform or ether, indiscriminately to every patient. We should consider age, condition and the nature of the operation. I append an excellent list, compiled by J. Frederick Silk, an English authority on anesthetics, which I have found very useful to remember: 1. *Age.*—Under 3 years, chloroform all through; between 3 and 12 years, A. C. E. mixture (alcohol 1 part; chloroform, 2 parts; ether, 3 parts); between 12 and 60 years, ether; over 60, induce with A. C. E. mixture, increasing the proportion of ether in long operations. 2. *Condition of patient.*—In the fat and plethoric, induce with A. C. E., and gradually increase the proportion of ether in long operations; in acute or very recent lung troubles, give chloroform all through; in chronic lung troubles—bronchitis or emphysema—give A. C. E. all through; in organic heart disease, if there is not sufficient compensation, e. g., pulmonary edema, use A. C. E. or chloroform, if compensated, ether; in marked atheroma, induce with A. C. E., and increase the ether proportion in long operations. 3. *Nature of operation.*—For an intracranial, give chloroform or A. C. E.; for those on the tongue and mouth, induce with A. C. E. and change for chloroform when the operation begins; in operations on the head and neck, begin with A. C. E., increasing the proportion of ether in long operations; in those on larger joints, always use ether, if possible; in abdominal, we do well with ether, but many prefer chloroform; in rectal and genito-urinary, use ether.

The writer can agree most heartily with most of the above, and would add, under No. 2, in kidney disease, use preferably chloroform, or A. C. E.

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THE VESICULAR MURMUR AND ITS RELATION TO PULMONARY HEALTH AND DISEASE.*

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My purpose in this writing is to individualize this one and only ausculatory sign as the criterion of pulmonary health, its absence as the positive proof of either functional or organic disease, also suggestions as to the most successful method of restoration and its application to the treatment of pulmonary tuberculosis.

In the auscultation of the normally acting healthy chest, two sounds are heard on inspiration, totally different in production, location and character. The first is the bronchial sound, caused by the friction of the inrushing tidal air, through the convective system of tubes, and is, in varying quality and pitch, always present in health and disease. It is first in regard to the time of its production in the inspiratory act, and, during the first eight to twelve years of life, is the only sound heard in health, the pulmonary system being as yet incomplete. The tidal air does not pass as such further than the third or fourth division of the bronchial tubes, consequently the murmur which follows the bronchial is entirely distinct from the bronchial in location and character, although wholly dependent on it for its production.

Where tidal air ceases, residual air commences, and fills the entire pulmonary system, the volume of which is increased about one-tenth by each normal inspiratory effort. It is this increment of tidal air imposed upon the residual air, which renders the air-sacs tense, and produces the vesicular murmur by the contraction and relaxation of their walls upon the residual air. Here the interchange of gases takes place, in accordance with the well-known law of diffusion, and the circle of the inspiratory act is complete.

The vesicular murmur begins as soon as the residual air is increased to the extent of rendering the air-sacs tense. In full breathing, it is heard before the tidal friction sound of the bronchi ceases, producing the bronchovesicular murmur, and is continuous after the bronchial sound ceases.

The production of the vesicular murmur may be prevented, or interfered with in part, by various influences and conditions of disease, some of which are not incompatible with a considerable degree of comfort and usefulness, for a limited period.

The conditions of this period, we are to take particular notice of, as it is the true pretubercular period.

We very commonly meet with cases in which the vesicular murmur is entirely absent, except in forced inspiration.

In women, this is very often the case, as a result of tight clothing, with the outward and upward movements of the chest, and the murmur can not be produced in the lower lobes of the lungs until the constriction is removed.

We often hear the expression "weak lungs," as ap-

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plied to people of sedentary pursuits, or to those who by heredity or environment are lacking in energy and vitality. I prefer to call them "lazy lungs," as better indicating an exact condition, and as a means of impressing the patient with the fact that by his own exertion he may have strong lungs. Lazy lungs are those in which the pulmonary function is imperfectly performed in the absence of all organic disease, resulting in a disproportion of blood and air in the lungs, the former being in excess, and its progress through the lungs being retarded.

As the blood current rushing into the heart excites it to forceful contractions, so too the air-currents, rushing into the lungs, with each inspiration increasing the tension of the alveolar walls, stimulates them to contraction as evidenced by the vesicular murmur. The necessity for a proper volume of air is just as important for the lungs as a due proportion of blood is required for a perfect and forceful contraction of the heart. The contraction of the air-sacs produces not only a more rapid interchange of gases, but also aids in the propulsion of the blood through the pulmonary capillaries, relieving stasis, and preventing exudates.

An incomplete pulmonary function produces blood stasis, and stasis produces exudation, which may take place into the bronchi, the intercellular spaces, and upon the surface of the pleura. When these exudates occur, there is more or less muffling of the vesicular murmur, and according to degree and location the production of râles, either bronchial or interpleural. That which is exuded into the intercellular spaces causes no sound, but interferes with the production of the normal vesicular murmur. These exudates often occur simultaneously, and are found most frequently in the apices, about the third intercostal space in front, and reaching directly through to the pleura in the interscapular space. These exudates, which are purely of a non-inflammatory character, when stirred by respiration, produce râles which are usually diagnosed as bronchitis, but in consideration of their etiology in obstructed circulation, more properly called bronchial catarrh, or catarrh of the apex, a result of pulmonary inactivity, a passive condition rather than an active process.

There are many direct causes of this passive condition. I have already mentioned the effect of tight clothing in women, which is so often persisted in to such an extent as to produce an arching of the sternum compensatory to the constriction. This takes place only in vigorous breathers, with good muscular development.

Sedentary occupations are productive of pulmonary inactivity. Underfeeding and overworking, the hard side of life, worry and care and many others; any one of the many influences in life which weaken the muscular system indirectly through the nervous and digestive systems, exerts a depressing influence on the respiratory system by decreasing the activity of the diaphragm and chest muscles, and thereby impairing the function of respiration, in the complete oxygenation and vitalizing of the blood, which process is announced by the vesicular murmur.

Big breathers are good eaters, and big eaters are good breathers as a rule, because the muscular and nervous systems are well nourished.

Tuberculous infection becomes a possibility only when the soil is prepared for the reception and propagation of the bacilli. Our attention has been directed so much during the past dozen years to the bacillus, and the means of combating it with drugs and serums, all of which have proved of doubtful utility, that it seems to me that we should take a new departure, not only in our pathological views relative thereto, but also in our practice.

Much has been said and written in regard to "suitable soil," without defining exactly what that soil is, how it is produced, and how immunity may be acquired. It used to be taught that man possessed a surplus of pulmonary tissue, which was not always required to be in complete action, but was kept in reserve for emergencies. This was certainly a fatal mistake, for all that a tubercle bacillus wants for a comfortable home is a choked capillary bronchus, either the result of insufficient expansion of a lazy lung, or of an active process of congestion or inflammation. The tubercle bacillus fails in its attack upon healthy tissue; it succeeds only when it finds either functional or organic abnormalities.

Imperfect function, as evidenced by the absence of the vesicular murmur, must always result in organic disease sooner or later—not necessarily tuberculous—and it is all that is required, as the primary condition in furnishing a suitable soil for the bacillus in the pulmonary tissues.

The pulmonary apices are primarily infected as a rule, because they are not as continuously and thoroughly expanded as the middle and lower portions, consequently blood stasis occurs, producing exudation as revealed by the "mucus click." This symptom has been regarded by many good clinicians as a positive evidence of tuberculosis without the evidence of the microscope. I have seen many such cases of catarrh of the apices under the practice of systematic expansion make a complete recovery of the function, with the removal of all abnormal auscultatory sounds, and the return of the pure vesicular murmur which is the evidence of pulmonary health.

We might as well try to strengthen a weak arm by carrying it in a sling, and by the administration of drugs, as to strengthen weak lungs by any and all the drugs known to medical art, without attention to the deficient function. In the treatment of such conditions we must use the same common sense which would guide us in the treatment of weak muscles or organs in any other part of the body.

Use, and use only, makes strong muscles and strong lungs. The better the oxygenation of the blood, the greater is its capacity for the reception of nutritious pabulum, with an increase of red corpuscles. The cold, livid finger tips become warm and of a healthy pinkish color, the appetite is improved, and every function is benefitted to a remarkable degree, with increase of body weight and endurance.

In the examination of the chest, our attention should be directed first, not so much as to what abnormal sounds are present, but as to the degree in which the normal sounds are present or absent, for the purpose of ascertaining whether an anatomical recovery may be obtained, in order that we may obtain a clinical recovery. In any impairment of pulmonary function, whether the microscope reveals the bacilli or not, it is safe always to suspect that such a development may occur, because the soil is prepared for the seed, and our efforts should be immediately directed toward the cleaning up of that soil, so that there shall be no suitable habitat for the bacillus. The vitality of the tubercle bacillus is very low, and unless it finds a location exactly suited to its growth and development it perishes.

If, according to Nuttall, a tuberculous patient expectorates about three billions of bacilli in twenty-four hours, certainly only a very small number find a suitable soil for their support, and yet when we take into account Naegeli's statistics in the pathologic institute of Zurich it appears that the infection is almost universal, as active or latent, being 97 per cent. of those over 18 years of age, with positive evidence at autopsies of non-fatal tuberculosis.

The human system then is able to resist the infection of tuberculosis in a very large majority of cases, and it must be from nature that we may expect to learn the method of successful treatment, for our art has failed by drugs and serums alone. Even should we be able to cure a specific case by tuberculin or other serum, what is to prevent a new infection if we leave the lungs in the same condition as they were in before the bacilli were rendered innocuous, for it is through the respiratory apparatus, much more than through all the other organs or tissues, that the infection is received?

This brings us to face the stubborn fact of the suitable soil, which Nature by its own processes succeeds in changing to an unsuitable soil, and as Vergely has tersely expressed it: "The soil is everything, the microbe nothing," and another, "that Koch's bacillus is not enough to produce tuberculosis."

There are no doubt other factors which go to make up this preparatory condition beside deficient pulmonary function. We may yet learn that good rich blood contains an antitoxin principle, which it may not always possess, particularly when deteriorated, and that the loss of this antibacillary power is the cause of the system succumbing in rapid miliary tuberculosis. Mays believes that tuberculosis may be primarily a neurosis, and adduces plausible argument in support of his theory, but from my present standpoint I look upon the neurotic condition as contributory to that condition of pulmonary inactivity which may be both a cause and an effect in the preparation of the suitable soil.

It can not be denied that the tuberculous infection is well-nigh universal, and that but few in comparison to the great number infected, live the average life of man, without at some time being infected by it. Autopsies made upon those dying of other diseases and by violence prove this.

The greater number of those infected recover without the knowledge of the fact of infection. Nature can and does get rid of the bacillus, and although there may not be a complete anatomical recovery, as indicated by the scars left after the healing of cavities, yet there is a complete clinical recovery, and full functional activity of all the remaining pulmonary tissue. Fibrinous exudations upon the pleural surfaces form adhesions between the opposing surfaces when there is deficient pulmonary activity, and, according to their closeness and thickness, prevent the expansion of the subjacent lung tissue, as evidenced by the muffling or complete absence of the vesicular murmur.

The starting-point of a tuberculosis may have been years before the actual onset of the disease, occurring in a pleurisy, or a pleuropneumonia, in which the exudates have not been absorbed, but remain as an organized barrier to perfect respiration, either in the lung tissue or on the pleura, and thus furnish the suitable soil for the bacillus. After the clinical recovery from a pneumonia or pleurisy, the closest attention should be given to the anatomical recovery, by systematic expansion of the lungs until the pure vesicular murmur is heard without muffling, when there will be no soil suitable for the bacillus. The expansion of the lungs is very materially aided by cold friction baths. There is a direct nervous connection between the skin and the lungs.

The nervous center which governs inspiration is situated in the gray matter of the medulla, opposite the roots of the pneumogastric nerves, and the nerves which have their center here are the pulmonary branches of the pneumogastric and sympathetic, the latter containing fibers from the spinal cord, also the cutaneous nerves of the face, arising from the fifth cranial pair, and the cutaneous nerves of the body generally. Through these excitor nerves, a stimulating impression is made upon the center by cold friction baths, and this is immediately followed by deeper inspirations.

It is through the intimate nerve connections between the skin and lungs that such remarkable results in the treatment of tuberculosis have been obtained by Winternitz and others in hydropathic institutions, and distinguishes cold bathing as a most valuable adjunct in bringing about a clinical recovery of the lungs, in which the bacillus can not grow and in which the inspiratory act is complete in the pure vesicular murmur.

We should early discover the evidences of tuberculosis, in order to treat it successfully, but we should much earlier discover whether the soil in any suspected chest is prepared for the ever-present bacillus, and by attention to the function of the lungs put them in such condition that infection shall be an impossibility. This is to be done by systematic mechanical expansion of the lungs by appropriate exercises, by the daily use of cold friction baths, by regulation of the diet, by the administration of such medicines as shall strengthen the nervous system and enrich and invigorate the blood cells, by attention to the sanitary condition of the home, by the proper ventilation of living and sleeping rooms, by life out of doors, by cheerful surroundings and cheering company, by a full and clear statement of the case to the patient, concealing nothing of the dangers of such conditions, by the assurance of rapid improvement and perfect restoration to sound health, as a result of strict fidelity to the requirements as directed by the physician.

In a recent article, "On the Early Recognition of Tuberculosis," a physician detailed a series of symptoms which to me appear as very late symptoms. Clubbed fingers, emaciation, capricious appetite, cog-wheel rhythm, intermittent albuminuria, and hemoptysis present to me a picture far on the way to a dangerous and probably incurable stage.

The difficulty of diagnosis—of which much has been written—and the dangers of becoming tuberculous become as nothing if we accept the clinical evidence of an impaired function, producing the suitable soil for the bacillus, and when we act upon that evidence, in Nature's method of restoration, by opening up and clearing out every tube and cell, by systematic expansion of the chest.

Where purulent infection has taken place, as in an ovarian tube, or the appendix vermiformis, or in any locality of the body, we put in the knife, and clean out the cavity and thus get rid of the infection. In choked bronchial tubes, which are the starting points of the active process of infection, we can put in air, which is quite as incisive and effective in the relief of such conditions as the knife is in the others.

Why should we wait until the infection has been proved by the microscope, before commencing radical

treatment, when the clinical features of the case warrant us in declaring that such a chest is prepared for the bacillus, through imperfect function, or through exudations resulting therefrom. In this respect we have been leaning too much upon the evidence of the microscope, and too little upon equally as positive clinical evidence, of far more valuable diagnostic importance, viz.: imperfect function, as shown by the absence or muffling of the vesicular murmur. If we accept the clinical evidence, the fight with the bacillus can be easily carried to a successful issue outside the walls. But if we find that the bacillus has already taken possession, the fight will be longer and harder, and accompanied with many dangers, although it may yet be carried to a successful result if we follow the teachings of Nature, so far as we know.

It is impossible to describe in words the sound of the vesicular murmur. Every individual physician must acquire a knowledge of it through his own independent discovery, by carefully listening to many healthy chests, until his own senses are forcefully impressed with its character and language. It is a gentle breezy sound, exactly like nothing else in the world, but when thoroughly appreciated one of the most delightful sounds the ear can listen to, for it means absolute health; its absence, absolute disease sooner or later, unless restored by appropriate means intelligently directed.

The methods which I have used for many years were described in an article entitled "Personal Observations in Pulmonary Phthisis," published in the *Medical Record*, March 14, 1898, and in THE JOURNAL A. M. A., Feb. 5, 1898. In the absence of more effective means, I still hold to the same methods, for the reasons there given.

The principle of the action of the pneumatic cabinet is correct, and indispensable in many cases, and should be applied where it is possible to obtain it, for it is a very difficult thing to wake up the almost paralytic chest muscles to perform their natural function, and is only obtained by persistent and continuous effort.

I have observed a very great lack of appreciation among medical men of the importance of this fundamental symptom of the vesicular murmur, and many lives are irretrievably lost by neglect of the methods required for its restoration, which otherwise might have been saved by prompt and early mechanical expansion.

ON THE RELATION BETWEEN THE VARIETY OF MICRO-ORGANISMS AND THE COMPOSITION OF STONE IN CALCULOUS PYELONEPHRITIS.

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No subject in renal diseases has been more discussed than calculus, especially as regards the etiologic factors involved in the production of the stone. Many theories have been held regarding the origin of stone in nephrolithiasis, but of these most have been finally abandoned from insufficient evidence; thus the idea that telluric conditions play an important rôle in this connection has been practically abandoned by all, as also the belief that gout was the most important etiologic factor in the development of such a condition, while Senator, Von Noorden and numerous other observers have definitely shown that the method of living and the variety of diet play, speaking generally, but a small part.

Our ideas regarding the formation of uric acid in the body have undergone a marked change, through the work of Horbaczewski and Kossel, who showed that in a large number of cases, at least, the uric acid output was directly dependent on the amount of nucleins destroyed in the various vital and metabolic processes of the body.

That, however, simply an increase in the uric acid output is in itself not sufficient to bring about calculus formation is shown in the first place by the fact that in childhood, when the uric acid output is extremely high, renal calculi are extremely uncommon, while in various conditions, pathologic and otherwise, which are associated with an extremely high output of uric acid, such as splenomyelogenous leukemia, calculus formation is rarely met with. Also in cases of experimental phosphaturia, we practically never meet with phosphatic stones.

It will thus be seen that some other factor besides the formation of excessively large amounts of various of the chemical constituents of the urine is necessary for the formation of the different varieties of stone, at least in the great majority of cases. This conclusion and also the discovery of an albuminoid center or nucleus in the case of a number of stones, has led some observers to believe that the stone is formed by deposition of some of the urinary constituents about a proteid mass made up of epithelial cells, pus cells, red blood cells, etc. Comparatively recently, however, bacteria have been assigned an important rôle in this connection, due in the first place to the frequent association of calculus with certain forms of renal infection, and in the second place to the demonstration of bacteria in the center of a number of renal calculi. Thus, according to Harris, who has recently reviewed the subject, various micro-organisms have been found in the center of several renal calculi, by Galippe, in one case by Begoyne, and in an especially interesting case by Lenander, who demonstrated zoögleal masses of the colon bacillus in the center of a calculus composed of calcium oxalate and urates. Harris himself also reports three cases in which cocci or bacilli or both were found in the center of uric acid calculi; in these cases, however, cultures of the bacteria were not made, but their presence was demonstrated only by microscopic examination.

In all the cases which I wish to report, careful bacteriologic examinations were made of the urine, while the chemical composition of the stone was definitely determined in every case by the qualitative methods of chemical analysis usually in vogue. These cases, seven in number, were all those in which infection of the renal pelvis or the substance of the kidney was associated with the presence of stone, and in all cases except one the symptoms definitely pointed to the condition being unilateral, and this was subsequently verified by the bacteriologic, chemic and microscopic examination of the urine on either side. The means of making this examination was as follows: Through the cystoscope a sterile ureteral catheter with a sterile rubber cuff on its distal end was introduced into the ureter and, after the urine had been allowed to flow for a short space of time, the rubber cuff was withdrawn and a certain amount of the urine collected in a sterile test-tube from which, subsequently, the bacteriologic, chemic and microscopic studies were made. This method absolutely eliminates any chance of contamination from the bladder or from external sources if carried out with rigorous care. From the urine thus obtained, cultures were made upon agar plates, and from the colonies that grew thereon the species of micro-organism was determined

by the usual methods. As stated before, ureteral catheterization was practiced in all cases on the side which gave no symptom, and in all cases except one the urine from that side was absolutely normal, showing that the calculous pyelonephritis was unilateral while in the case of the infected side the urine always contained large numbers of pus cells and a smaller number of red blood and epithelial cells and a considerable amount of albumin, while the reaction of the urine from that side depended entirely upon the variety of micro-organism met with, being acid in the one case of calculous pyelonephritis due to the colon bacillus met with, and alkaline in five cases due to various micro-organisms which possess in a marked degree the ability to decompose urea. These seven cases are therefore subdivided into: 1, those where the urine from the affected kidney is alkaline and 2, where the urine is acid.

WHERE THE URINE IS ALKALINE.

Five cases have been met with and studied bacteriologically and chemically, in which the urine was alkaline, while in one other case, although there had been marked urinary alkalinity at the beginning of the trouble the infection had subsequently died out spontaneously and the urine, when examined by us, was acid and sterile. The history of the development of the infection in these cases is of extreme importance; in Case 1 the condition came on insidiously, without any apparent cause, and was subsequently followed by several typical attacks of renal colic. In Case 2 the onset had also been insidious, while the only symptoms present were dull pain in the back and right side for several years, and loss of strength and weight. In Case 3, where the condition had lasted for over fifteen years, the etiologic factors had been quite obscure, the condition developing after a protracted anemia, the exact cause of which could not be definitely determined although it was probably chlorotic in nature. The symptoms in this case had been pyuria and pain, first on the left side, subsequently on the right side also, and in the former case they became so great as to necessitate the removal of the kidney which was converted into a large pyelonephrotic sac in whose center a calculus was found. In Case 4, five months after a difficult instrumental labor, the patient complained of severe pain in the right renal region, which had been constantly present ever since (3½ years) associated with occasional attacks of sharp pain. In Case 5 the pyelitis was secondary to a cystitis occurring 2½ years after the development of the latter condition. The symptoms were almost constant severe pain in the right renal region, associated with a high grade of pyuria; while in the sixth case, where the infection had spontaneously died out, the patient had developed an acute ammoniacal cystitis after severe instrumental labor thirty years ago, followed shortly by symptoms of an infection of the left kidney; the urine remained alkaline or ammoniacal for many years, but for the past twenty years has been almost constantly acid, although it still at times contains enormous numbers of pus cells as if from some large sac which occasionally empties itself. The bacteria found in these cases were respectively as follows: Case 1, B. proteus vulgaris; Case 2, B. proteus vulgaris; Case 3, a white staphylococcus which rapidly decomposed urea and liquefied gelatin but slowly; in Case 4, the same white staphylococcus just mentioned; in Case 5, the B. proteus vulgaris; while in Case 6, as stated before, the urine was sterile.

In all cases except one, nephrectomy was performed, the stone removed and the renal pelvis irrigated and drained; in the one exception mentioned several calculi were voided with the urine, so that it was possible in all cases to make a careful chemical examination of the stone. The chemical composition of the stone in all these cases was the same, the calculus being made up of the phosphates and carbonates of calcium and magnesium, although the proportion of the various salts differed in the different cases. In one case, that of the calculous pyelonephritis due to the infection of the B. proteus vulgaris, a culture was made under the most careful aseptic precautions from the center of the stone, and the B. proteus vulgaris was obtained therefrom in pure culture; in another case microscopic examination of the center demonstrated staphylococci—in this case the renal infection was due to the white staphylococcus previously mentioned—while in the third case, that in which the infection began thirty years ago and in which the urine had apparently been sterile for upwards of twenty years, no bacterial center was able to be demonstrated. In the other three cases the stones were not examined to see what was the exact condition present in their respective centers.

In one case the diagnosis was made in a rather unique fashion. Through the ureteral catheter there was injected into the renal pelvis of the affected side 15 c.c. of a .2 per cent. solution of hydrochloric acid, which was allowed to remain in the pelvis between ten and fifteen minutes; it was then analyzed chemically, when the marked amount of calcium and magnesium phosphate and carbonate present showed that the pelvis contained a calculus of that composition.

The condition in all these cases was, as far as could be judged from the careful study of the symptoms and the urine, one of infection of the kidney subsequently followed, sooner or later, by stone formation. A consideration of the findings in certain of the cases warrants us in the belief that the nucleus of the stone was a zoögleal mass made up mostly of the micro-organisms causing the infection, while the constant alkalinity of the urine caused by the urea-decomposing power of the micro-organism furnish the salts necessary for formation of the stone.

The extreme frequency of calculus in infections of the kidney brought about by such urea-decomposing bacteria is shown by the fact that, of all the cases of renal infection due to this class of bacteria, stone was found in all the cases but one which was an acute pyelonephritis of but two weeks' duration where, obviously, sufficient time had not elapsed for the deposition of the salts necessary to form the stone.

WHERE THE URINE IS ACID.

Only one case was met with in which stone was associated with a pyelonephritis due to a micro-organism which retained the normal acidity of the urine. This case was one of infection arising immediately after the formation of a uretero-vaginal fistula, which in turn had been produced by the trauma of a very severe, protracted instrumental labor.

The infection was due to the B. coli communis, and had been present for one year; the urine from this kidney was discharged entirely through the fistula, contained pus, blood and epithelial cells and considerable albumin and was always very markedly acid; from this urine a pure culture of the colon bacillus in considerable number was obtained. There had been absolutely no symptoms of stone, but, following upon a careful vaginal and rectal examination, a small calculus was passed

through the fistula, the chemical analysis of which was a mixture of uric acid and urates, the former largely in excess. The consideration of this case makes it highly probable that the stone was formed definitely because of the urinary infection.

Albarran has divided the cases of renal calculi into primary stones where the kidney is not the seat of infection, and secondary stones where bacteria are found in the renal pelvis; according to this classification our cases fall into the second group, although recently many have ascribed to bacteria the formation of stones of the first group, believing that a renal bacteriuria furnishes the focus about which the stones are built.

My series of cases, therefore, besides showing the definite relationship existing between the variety of micro-organism causing the infection and the chemical composition of the calculus, also adds more cases to the ever-increasing list in which to the presence of bacteria is to be ascribed the formation of stone; this is not only so in the case of renal calculi, but the causal relationship between bacteria and stone has been shown also in cholelithiasis, salivary, lacrimal and pancreatic stones, in rhinoliths and otoliths and various stones found in pathologic conditions of the respiratory tracts.

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COMPLETE INGUINAL EXTRAPERITONEAL HERNIA OF THE BLADDER; RECOVERY.

J. F. BALDWIN, A.M., M.D.

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Mr. D. H., West Mansfield, Ohio, aged 51, 5 ft. 6 inches in height and weighing 245 lbs., consulted me May 26, 1900. He stated that he had had an inguinal rupture for eight years, which he had been unable to retain with any form of truss. Ordinarily he had been able to reduce his hernia, but it had now been irreducible for forty-eight hours. The day before he consulted his local physician, Dr. Wanser, who administered an anesthetic but was unable to affect a reduction. He stated that he had noticed many times that he was unable to empty his bladder completely without lifting up the tumor.

The tumor was about the size of two fists and extended to the bottom of the scrotum. It was somewhat oval in outline and conveyed a sensation of fluctuation. It was tender and entirely irreducible. Although he was experiencing some pain, there was no evidence of an intestinal disturbance. I therefore explained to him that I thought the main mass of the tumor was omental in character, but that I should not be surprised to find his bladder involved. I based this statement of the involvement of his bladder on the fact that he had to lift up the tumor in order to completely empty that viscus. I advised immediate operation and assent was given. He was admitted to the hospital and the operation made an hour or two later.

I was assisted in it by my regular assistants, Drs. Shepard and Chapman, Dr. Willey, of Baltimore, Md., being present. The usual incision was made over the tumor, but this had to be somewhat longer than usual, owing to the great amount of fat which was present, an incision about 2 inches in depth being required to reach the external fascia. The tissues were carefully divided until what corresponded to a hernial sac was opened. This disclosed a fleshy mass adherent throughout. The adhesions, however, were easily separated and the mass brought up into view. The fluctuation which I had noticed and which I supposed was due to free serum in the hernial sac, such as is usually met with in cases of strangulation, was now found to be inside the extruded mass. Drawing the tumor down the finger was passed up to the neck when it was found that the extrusion had taken place apparently as in a direct inguinal hernia. The ring being enlarged somewhat, and the finger passed through, the diagnosis was arrived at very promptly that the projecting mass was practically the entire bladder, since all that was left inside the pelvis was merely the neck. The bladder walls contained a thick deposit of fat so that the entire thickness seemed to be about one inch.

With a good deal of difficulty a pelvic receptacle was made by separating the peritoneum, and the bladder replaced. The replacement was only accomplished with the utmost difficulty, owing to the large amount of adipose tissue present. The patient was placed in the Trendelenburg position and so maintained for a considerable length of time before complete reduction was accomplished. The opening was then carefully closed in layers with kangaroo tendon. The hernial sac, which consisted merely of condensed connective tissue instead of peritoneum, was trimmed up and the fat brought together by plain catgut in two layers, with a subcuticular stitch for the skin. The wound was then sealed with collodion and a spika bandage applied.

Recovery was immediate and in every respect satisfactory. The patient reported at my office four months later, when everything was found in normal condition, the tissues being apparently perfectly strong and firm.

I have been able to find in the literature at my disposal but very little bearing on this most unusual form of hernia. In the *Philadelphia Medical Journal*, of June 30, 1900, there is a synopsis of an article by E. Martin, in the *Deutsche Zeitschrift für Chirurgie*, for February, 1900. In this Martin reports a case briefly as follows: A man, 51 years of age, had had a hernia the size of a small walnut in the right groin for some eight years past, present only at intervals and always easily reducible. Twenty-four hours previously the hernia had reappeared, this time larger and irreducible: the pain and acute symptoms led to the diagnosis of incarcerated omental or intestinal hernia. At the operation it was found that the hernia consisted of a portion of the bladder which had been protruded extraperitoneally, and which was easily replaced after the constriction had been relieved. The patient recovered. Martin, in this article, has collected from the pages of literature nine cases of strangulated hernia in which, as in his own case, the bladder alone was involved. In only one of these cases was a hernia of the bladder suspected before the operation was started, and it is plainly to be inferred from this report that in most of these cases, as well as in his own, the bladder was wounded before the mistake in diagnosis was discovered.

According to Martin's article, therefore, my own case makes the eleventh to be recorded. In my case, fortunately, the involvement of the bladder was suspected before beginning the operation, and hence that organ was looked after.

Cases in which the bladder has been involved in a hernia together with omentum and intestine are not so uncommon, but that the bladder alone should become extruded is certainly quite surprising, and for that reason such cases are well worth recording. In the case reported the thick deposit of fat in the bladder wall caused it to so closely resemble omentum that the surgeon, unless on his guard, would more than likely have incised it.

Taxing Poisons.—According to the *New York Times*, in an editorial with this caption, Sir Michael Hicks-Beach, Chancellor of the Exchequer, England, has received a suggestion from the food reformers that a tax be laid on poisons found in food and drinks. Arsenic in beer appears to be the main inspiration of the proposition. Parliament has certainly deemed it of enough importance to create a government commission, much to the consternation of the brewers. The value of the public laboratories is pointed out from the fact that the presence of arsenic in beer is a very recent discovery. The combination of a tax and a benefit is a rare one, as maintained by the editorial in question, but the argument is advanced that not much aid would be given to the replenishment of the imperial coffers since what it was sought to tax would disappear. "To smile but put the question by," virtually concludes the article, is the immemorial habit of a chancellor. Reforms, however, it may be added, are seldom advanced when criticisms regarding methods become too rampant.

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THE STATE OF THE CIRCULATORY ORGANS IN THE EARLY STAGE OF SYPHILIS.

Syphilis is one of the most conspicuous illustrations of the anticipation by empiricism of science, for although we have now learned to recognize the disease from its manifestations, and to apply almost specific medication, we are yet without positive knowledge as to its causative agent. It is, however, generally believed that this is a micro-organism, probably of vegetal origin, and that to the lodgment of this and the reaction thereby induced the local lesions are due, while the constitutional and remote phenomena are to be attributed to the toxic products of its vital activity. Clinical observation has shown that the affections to which syphilis may thus give rise, directly or indirectly, are almost limitless, no system or organ or tissue being exempt. An interesting clinical study of the circulatory organs in the early stages of syphilis has been made by Dr. Karl Grassmann,[1] in the course of which 238 patients were examined, with the result of showing that the normal function of the heart in the secondary stage exhibits, in at least two-thirds of the cases, principally in females, disturbances varying between clinically slight abnormalities and marked insufficiency of the heart. Such subjective disturbances as may be present are almost unexceptionally attended with objectively demonstrable deviations from the normal. Derangement of the pulse is exceedingly common, especially arrhythmia, and abnormal frequency, in the direction of increase or diminution. In 85 per cent. of patients with disturbances of normal cardiac rhythm the heart exhibited other abnormal manifestations. In addition to "nervous" disorders in cardiac action, actual neuroses of the heart—habitual bradycardia, tachycardia, angina pectoris—also occur in individual cases.

Frequently in the early stage of syphilis the function and the nutrition of the heart-muscle suffer, as indicated subjectively by palpitation, etc., and objectively at times by slight, at other times by more marked, insufficiency of the myocardium. A further sign of injury to the heart consists in the so-called accidental murmurs that are audible in about 40 per cent. of the cases. The weakness of the muscular wall of the heart results in a large proportion of cases presenting systolic murmurs in moderate, sometimes considerable, dilatation of the heart, involving almost exclusively the right side, rarely both, exceptionally only the left ventricle. The clinical picture of functional mitral insufficiency develops with relative frequency, and it is not rarely observed to disappear in the course of antisyphilitic treatment. The changes in the size of the heart, equally with the murmurs, are of varying character, although often, like the disturbances in the pulse, they are constant. Isolated cases suggest a possibility of the occurrence of fresh endocarditis, although the evidence is not complete. Exacerbations of chronic endocarditis also appear to occur now and then in the early stage of syphilis. Dry pericarditis was observed in one instance.

In a small proportion of cases there is increased resistance in the peripheral arteries, even in youthful patients. Nevertheless, in addition to syphilis, other etiologic factors capable of causing premature arteriosclerosis almost always play some rôle in this connection. In no case was aortic insufficiency or evidence of aortic aneurysm observed. The blood-pressure exhibits in almost all cases in the early stage of syphilis greater or less diminution, and exhibits variation in the course of mercurial treatment. Reduction in arterial pressure is likewise a sign of relative functional insufficiency of the left ventricle, just as the dilatation frequently present is a sign of that of the right ventricle.

Coincidently with the existence of symptoms of secondary syphilis the hemoglobin percentage of the blood is reduced in almost all cases, rarely in marked degree. Such improvement as takes place occurs soon after administration of the first doses of mercury, while in the subsequent course, in some cases from the outset, further reduction in the hemoglobin takes place. The changes in the condition of the heart are not to be explained by chlorotic changes in the blood of syphilitics; at least clinical observation discloses no relation between the two. It is likewise beyond doubt that the various abnormalities in the function and the size of the heart are not attributable to the action of mercury, as they may occur before its administration. On the other hand, it can be shown in many cases that the existing alterations in the function of the heart improve or disappear in the course of antisyphilitic treatment—from the slight disturbances in the pulse to functional valvular insufficiency.

In the absence of other etiologic factors, and on the basis of the observations made, syphilis is to be looked upon as the primary cause of the cardiac disturbances, which exhibit an analogy with those observed in connection with chlorosis, anemia, etc., especially with regard to complete restoration to the normal. It is certain that true combinations with ordinary chlorosis are also to be taken into consideration in explanation of the cardiac disturbances in the early stages of syphilis; in the majority, however, the syphilitic infection alone is responsible. The manner in which this affects the nervous apparatus of the heart, as well especially as

1. Deutsches Archiv f. Klin. Med., 69 B., 1, 2, 3, 4, H.

the fibers of the heart muscle, whether indirectly by impairment of the nutrition of the entire organ, or indirectly through the toxic substances that are developed in the body as a result of the activity of the syphilitic virus, is at present beyond solution.

STUDIES IN THE DIAGNOSIS OF BUBONIC PLAGUE.

Since we know positively that bubonic plague exists in San Francisco and that there is a likelihood of cases appearing in other large cities—a likelihood which must not be neglected—our immediate interest in various matters relating to the diagnosis of this disease has been markedly quickened. In the first place this fact stands out predominant, namely, that the scientific diagnosis of bubonic plague rests upon the bacteriological examination, and no other diagnosis is acceptable in this case but one of scientific accuracy and positiveness. When the plague appeared in Oporto in the summer of 1899, the Institute for Infectious Diseases in Berlin established a separate department for the study of the diagnosis of plague. Needless to say all conceivable precautions were instituted against the possibility of accidental infections. Courses in the diagnosis of pest have been given to physicians in order that there might be no lack of persons with practical experience in the bacteriological diagnosis of this disease. Especially the morphology and the pathogenicity of the bacillus of plague have been studied. In his report of the work of this department for 1899-1900, Kolle[1] refers to a number of interesting observations made during this period. The polymorphism of the bacillus is emphasized; it seems that this organism is especially unstable as regards its form—so-called involution-forms, branching organisms, clubbed swellings, etc., appear with great ease. Polar staining is always obtainable if the cover-glass preparations are brought into absolute alcohol for one minute and then rapidly dried before being stained with dilute aqueous solution of methylene blue. Cultures of plague bacilli are liable to rather sudden attenuations of virulence. Repeated passages through susceptible animals, such as rats, may restore the original degree of virulency. Kolle found direct inoculations of the healthy conjunctiva with the blood of the infected animals the quickest and most reliable method to pass the bacilli through a series of animals.

White mice die without exception when inoculated with an infected needle. A hemorrhagic infiltration forms with swelling of the adjacent glands and septicemia. About half of the mice fed with infected material died. In mice the spleen is rarely enlarged in plague. As in mice, rats that die after being fed with infected material show primary bubo in the submaxillary region as a rule. A larger percentage of the rats so fed died of plague than in the case of the mice. Hence it seems quite clear that rats may infect themselves under natural conditions by eating of plague cadavers.

1. Zeitschr. P. Hyg. u. Infektionskr., 1901, xxxvi, 397.

Guinea-pigs are also very susceptible to injection with the plague bacillus. Minute quantities inserted within the peritoneal cavity cause fatal peritonitis. Indeed typical infection of guinea-pigs follows the placing of bacillary material upon the shaved skin; redness develops and small pustules not unlike vaccine pustules form, bacilli being present in the contents. Soon the regional lymph glands swell and become hemorrhagic; a purulent cord seems to run from the infected area in the skin to the glands. Bacilli are found in large numbers in the subcutaneous tissue, the glands, and the blood. In the spleen and occasionally in the lungs white nodules appear, very much like tubercles, and composed of cells and countless bacilli. In more chronic cases the centers of these nodules may disintegrate. Older cultures with reduced virulence may produce a chronic productive process in the mesentery and peritoneum.

Kolle and his associates determined this important fact, that for the demonstration of plague bacilli in various mixtures where but few may be present the placing of the material upon an area of shaved skin of guinea-pigs is the very best method. Infection takes place even when but few bacilli of slight virulence are present. Bacilli that are not pathogenic on direct injection into the subcutaneous tissue quickly cause fatal infection when rubbed into the intact and shaved skin of the abdomen. This peculiarity may explain some things in the infection of human beings with pest.

Cats also may be infected by eating material containing bacilli, and they may die from septicemia with primary bubo in the submaxillary region.

Efforts to produce infection of rats by means of vermin, especially fleas of these animals, failed entirely in the hands of Kolle. He is inclined to believe that the disease spreads among rats through the live rats eating parts of those dead from plague, but he finds the problem in regard to the fleas of sufficient importance to merit further investigation. Studies in immunization are also under way.

DEFORMING OR RHEUMATOID ARTHRITIS.

The need for greater refinement in the classification of acute and chronic diseases of the joints would seem to be obvious, and there is not wanting evidence of healthy activity in this direction. It would appear that in addition to acute specific infectious inflammation of one or more joints—which for the sake of convenience we may continue to designate "acute articular rheumatism"—there occur other joint-inflammations that result from infection with the causative agents of other diseases, as scarlet fever, influenza, gonorrhea, smallpox, pyemia, etc. Any of these articular affections may be followed by a chronic condition of the joints, and as to the propriety of designating them "rheumatic" there may be some doubt, although this chronic disorder may also be of insidious origin, apparently without antecedent local disease. From this chronic affection of the joints that known as deforming or rheumatoid arthritis

differs in several respects; and it seems not impossible that more than one disorder has been comprehended in this designation. In fact there has been distinguished from it a chronic disease of the joints that, although it presents certain superficial resemblances, differs essentially in beginning of the synovial membrane rather than in the articular cartilage.

There are certain reasons for believing that deforming arthritis is, in some instances at least, a disease of nervous origin, despite the fact that neither gross nor minute lesions of the nervous system have as yet been discovered. Thus, atrophy takes place in the muscles related to the affected joints, and further, somewhat analogous lesions occur in connection with a number of diseases of the nervous system, such as tabes dorsalis, syringomyelia, neuritis. In further support of the view that so-called deforming arthritis may really comprehend several different conditions is the fact that while in general the disease is most obstinately unyielding to treatment, occasionally most brilliant therapeutic results are obtained, and in some cases these have been brought about by measures directed toward the spinal cord. Thus, P. W. Latham,[1] in discussing this subject, cites a number of cases reported by Dr. J. K. Mitchell in 1831, in which relief of arthritic symptoms supervening upon injury to the spinal cord was afforded by the application of from eight to sixteen cups and abstracting as many ounces of blood from the neighborhood of the cervical or lumbar enlargement, or if this failed by the application of blisters in the same situation. Latham himself reports two cases of deforming arthritis in which great relief was obtained by continued counter-irritation over the spine. Dr. Henry Tucker[2] has reported a case of deforming arthritis in which remarkably beneficial results were brought about by protracted treatment with superheated air, and Dr. M. G. Tull[3] has recorded almost parallel results in a case treated by the application of cold to the spine. The patient was an unmarried woman, 20 years old, who presented painful swelling about the ankles, with difficulty in walking, and deformity of the wrist-joints, which had resisted varied treatment, including superheated air. Dr. Tull applied a long ice-bag to the spine, at first for two hours at a time, morning and evening, and subsequently for one hour twice daily. Guaiacol carbonate, a preparation of lithium and a solution of iodin were also administered. The improvement was quite remarkable, the patient regaining her power of locomotion and being practically restored to health. A similar result was obtained in the case of a negro, 40 years old, who had been confined to bed for twelve months with pain, redness and swelling of the knees, wrists and ankles.

In view of the hopelessness with which cases of deforming arthritis are ordinarily looked upon, it would seem that a fair trial should be given to treatment by means of the application of counterirritants and other remedial measures to the spine. Success in this direction would contribute to the establishment of the nervous origin of at least some forms of the disorder in question, and it can be conceived that it might further lead to the employment of the same measures in the treatment of other diseases both of the joints and of the spinal cord.

1. Lancet, April 6, 1901, 998. JOUR. A. M. A., April 27, p. 1213.
2. Trans. Phila. Co. Med. Soc., Nov. 1899, xx, No. 8, p. 273.
3. Proc. Phila. Co. Med. Soc., 1901, xx, No. 3, p. 133.

COMBINED MEDICAL AND SURGICAL CLINICAL INSTRUCTION.

Although the didactic lecture must ever hold a distinct place in the medical curriculum, it has already been in considerable degree superseded by clinical instruction. While applied knowledge is what the student must ultimately have, it will be more useful and more productive to himself and to others for being based upon a sound comprehension and a clear perception of the underlying principles and from an appreciation of its relations to other subjects. In the evolution of medicine into its various subdivisions it has been found that there are certain disorders that fall at one time or another into the field of more than one of the many specialties that have resulted from the division of labor, and it may be that medicine has thereby lost in profundity what it has gained in extent. The process of disseveration having gone so far, the time now seems ripe for some attempt at a more intimate integration of the various branches of medicine. This necessity seems already to have been appreciated, and it has been given expression to by the establishment within recent years of publications devoted to subjects that may be looked upon as occupying what has been designated the border-line between one and another of the departments of medicine. In line with the same thought, combined demonstration in two subjects, for instance medicine and surgery, has occasionally been undertaken.

There are a number of disorders that are better studied and the better treated for the conjoint observation of both a clinician and a surgeon, and the student will be the better instructed for having the affection presented to him in its entirety, from beginning to end. Besides, the relations of clinician and surgeon are thereby rendered more intimate and mutually more helpful; and each has increased his respect for the ability and the powers of the other. Among diseases of the character under consideration, which from the present point of view may be looked upon as partly medical and partly surgical, are abscesses or suppuration or gangrene or perforation complicating acute or chronic infectious diseases, such as tuberculosis, typhoid fever, and appendicitis, the exanthemata, gastric ulcer, hydatid disease, abscess or tumor of the brain, thoracic, abdominal or intracranial aneurysm, accumulations in serous cavities, diseases of the gall-bladder and the urinary bladder, as well as the kidneys, malignant disease of the viscera, etc.

In a paper read before the Philadelphia County Med-

ical Society by Dr. Robert G. LeConte, one of the surgeons to the Pennsylvania Hospital, he related a plan that he and his medical colleague, Dr. F. A. Packard, had carried out recently in a course of seven or eight lectures. The combined lecture occupied the greater part of two hours, a case or cases being exhibited; the etiology, pathology, symptomatology, diagnosis, prognosis, and the medical treatment being outlined by Dr. Packard. Then Dr. LeConte discussed the surgical treatment, which he at once proceeded to carry out before the class. If death resulted, the reasons for failure were pointed out, and the anatomic specimens were demonstrated. In this way both teacher and student obtained a complete clinical picture that was likely to remain fixed more permanently in the memory of each than the most lucid and interesting description. Such a method of teaching is, of course, not universally applicable. One difficulty resides in the fact that cases available for such conjoined treatment are not always to be had. Some objection might be raised further on account of the additional time required of each physician, but this is an individual matter and those whose desire it is to give the best instruction from both the student's and the teacher's view-point will not consider the sacrifice of time entirely uncompensated. From the pedagogic standpoint also the plan has everything to commend it, and so far as possible it should be amplified and its adoption encouraged.

RATES FOR THE ST. PAUL MEETING.

Attention is especially called to the report of the Committee on Transportation, concerning the coming meeting of the ASSOCIATION, printed in the last and this week's issue of THE JOURNAL. It will be seen that this year the ASSOCIATION has been treated in an unusually favorable manner by the various passenger associations, the Western having granted a rate of one fare and $2 for the round trip for its entire territory, and the Trunk Lines and New England Passenger Associations a rate of one fare and a third. The rulings of the Central Passenger Association, as announced this week, have been changed and the more favorable rate of one fare plus $2 granted. The time limits too are unusually favorable this year, extending to July 15, and so allowing ample time for the proposed excursion to the Yellowstone National Park immediately following the meeting. It is still hoped that concessions will be made by the Trunk Lines and by the New England Passenger Association.

WILD BEASTS IN INDIA.

A correspondent of the *Indian Medical Record* makes a vigorous protest against the Indian Forest Department's regulations, under which the extirpation of the homicidal wild beasts that infect that country is made impossible. He says the government forests and the game laws are practically responsible for the loss of thousands of human lives, and the ruin of cultivators, all for the benefit of a certain revenue and the sporting proclivities of a privileged class. Shooting privileges are strictly restricted and the consequence is the wild beasts multiply. Owing to these laws he says some sections have become depopulated. The cultivator must not kill the animals that ravage his fields or endanger his own life and destroy his domestic animals, therefore, villages are abandoned and become overgrown with jungle, thus increasing the evils. There may be some reasons for forest preservation, but authorities who make and enforce laws that cost thousands of human lives needlessly, or for the sake of gratifying the sporting proclivities of a class, take upon themselves a serious responsibility. The few thousand lives annually taken by wild beasts may be a very small proportion of the two or three hundred million of India's population, but there is no excuse for their loss if it is in any way due as charged to special regulations made for the amusement of a privileged class. The Indian peasant needs protection against himself with his heathen zoophilism, and it is a pity that his civilized masters should add to his perils for the sake of their own recreation.

MENTAL CONTAGION.

Every little while some non-medical authority propagates a theory as to the contagion of mental diseases, and this is sure to be brought out if an asylum physician succumbs to such disorder. Association with minds diseased is then dilated upon and extensive generalizations are indulged in on very slim foundations. As a recent instance of this may be mentioned an editorial in a yellow journal *par excellence*, in an interior city, on the alleged mental failure of a prominent ex-asylum superintendent. The individual in question was over 80 years old and had suffered, we understand, from a shock of paralysis, two facts which would probably sufficiently account for such failures in memory, etc., as actually existed, but the chance was too good to be lost and the usual commonplaces had to be indulged in in regard to the perils of association with the mentally afflicted and a moral drawn on the mental effect of associations generally. About one person in about three hundred and fifty is insane enough to be counted as such, in the general population, and a rigid drawing of the line would probably increase this figure. It is extremely doubtful whether any much larger proportion than this could be found in those who are intimately associated with the insane, excluding, of course, relatives, and others who obviously share the same heredity and predisposition. There is such a thing as mental contagion; it is notoriously marked in hysterical cases, but there is very little evidence of any real transmission of serious mental disease, simply as such, to persons of healthy mental organization and not possessing any organic predisposition or heredity. The cause of insanity may be an infection, as is probably that of general paralysis or paresis which seems to be sometimes communicated from husband to wife, but the method here is not obscure and is purely physical. In the ordinary use of language we can not speak of insanity as contagious. These are commonplace facts, but the notion is occasionally in evidence even in medical journals and its correction is therefore not altogether amiss.

DIFFUSE PAPILLOMATOUS GROWTHS IN THE URINARY PASSAGES.

Busse[1] describes two examples of widespread tumor growth of histologically benign structure in the urinary tracts. In one of the cases the history extended over a period of twenty years, periodical hematuria being the most striking symptom. From the examination of specimens obtained by operation and also after death it was found that the mucous membrane of the pelvis of the right kidney, which formed a hydronephrotic sac, of the entire ureter and of the urinary bladder around the right ureteral orifice was the seat of extensive papillomatous proliferation of altogether benign character. In the second case the history of bloody urine and of pain in the left renal region extended over a period of seven years. There was a large hydronephrotic tumor of the left kidney, which was removed 4½ months before death. Examination of the kidney removed at the time of operation and of the ureter and bladder after death showed extensive papillomatous growths throughout the mucous membrane of the pelvis of the left kidney, the left ureter, and the urinary bladder, with hydronephrosis. In the bladder the tumor had become carcinomatous. As far as the history of these two cases goes, and based upon the results of the examination, it is most reasonable to conclude that the hydronephrosis was caused by obstruction of calculi or by strictures. There was in neither case any history of pyelitis or nephrolithiasis. These cases appear to belong to that category of tumors in which whole organs, or even systems of organs, are involved, e. g., the gastrointestinal tract, fibromas of the nerves, diffuse chondromas of the skeleton. The disease is rare. Busse mentions five other cases. The cause is wholly obscure.

"PARATYPHOID" FEVER — DISEASES CLINICALLY IDENTICAL WITH TYPHOID FEVER BUT CAUSED BY BACILLI OTHER THAN BACILLUS TYPHOSUS.

Schottmüller,[2] in a series of sixty-eight cases of suspected typhoid fever whose blood he examined bacteriologically, encountered five the blood of which contained bacilli differing in important characteristics from the bacillus of typhoid fever. In all these cases there seemed to be no occasion for any reasonable doubt that the clinical diagnosis of typhoid fever was correct. There was in no case symptoms nor signs incompatible with this diagnosis. The general clinical picture was that of typhoid fever of various grades of severity. The bacilli isolated from the blood, which did not contain typhoid bacilli, presented well-marked differences in cultural peculiarities from both B. typhosus and B. coli communis. They produced gas in glucose media and slowly alkalinized litmus milk without causing coagulation. It is concluded that the bacilli isolated can not be regarded as typhoid bacilli, nor as colon bacilli, but as occupying middle ground. Typhoid serum did not agglutinate any of these bacilli which were promptly agglutinated by their own serums, the latter having, however, no effect upon typhoid bacilli, whereas colon bacilli were agglutinated. Assuming that the foregoing observations are reliable—and observations of similar import are being recorded in various places—then it seems that not all cases clinically typhoid fever are caused by the typhoid bacillus. The cases here referred to were sporadic cases and the mode of infection is unknown. Schottmüller suggests the name "paratyphoid" ("paratyphus") for cases of this kind. Future observations must show whether the familiar clinical picture of typhoid fever harbors various diseases of different etiology, and it is obvious that careful bacteriological studies are necessary in order to clear up questions of this nature. It may be that when attention is turned toward this question close observations may detect differences in the clinical course of typhoid fever and "paratyphoid" fever.

1. Virchow's Archiv, 1901, 164, 119-132.
2. Zeitschr. f Hyg. u. Infektionskr., 1901, xxxvi, 368.

CONGENITAL ANOMALIES OF THE PANCREAS.

The increased attention now being given to the pathological anatomy of the pancreas has served to create interest in the anomalies of this organ. According to Glinski[1] developmental anomalies of the pancreas may be divided into three groups: 1. The so-called pancreas minus, which consists of an accessory or supernumerary lobule connected with the head of the pancreas, being separated from the latter by a more or less distinct constriction. 2. Accessory pancreas, which is entirely separated from the main organ and generally situated in the wall of the stomach or intestine. When located in the intestine accessory pancreas may occur in the walls of intestinal diverticula, which, in some cases at least, appear to be dependent upon the accessory pancreas. They should consequently be distinguished from Meckel's diverticula. 3. Divided pancreas, produced by mechanical pressure especially by blood-vessels during development, the fusion of the separate evaginations of the intestine by which the pancreas is formed being prevented. In this case either the head or the tail of the pancreas is partially subdivided and separated into unequal parts by blood-vessels, the smaller part being connected with the main pancreas by means of the duct. In addition to these three main groups may be mentioned the unusual but exceedingly interesting anomaly of the pancreas known as annular pancreas—*pancreas annulare*—which is not discussed by Glinski; here the head of the pancreas completely surrounds the duodenum, which passes through the pancreatic tissue. There was a specimen of this anomaly exhibited by Hugo Summa, of St. Louis, at the meeting of the ASSOCIATION in Atlantic City, last June,[2] and more recently Dr. Tieken, of Chicago, presented a specimen to the Chicago Pathological Society.[3] Dr. Tieken's specimen was remarkable for the fact that the encircling pancreas had caused an actual constriction of the duodenum, which presented a large fusiform dilatation above the point of narrowing. Anomalies of the pancreas are consequently of practical as well as of anatomical interest. As regards the genesis of the developmental anomalies of the pancreas, Glinski points out that pancreas minus, accessory pancreas, and pancreas divisum reproduce normal conditions in the lower vertebrates. The anomalies are all explainable on the score of disturbances in the

1. Virchow's Archiv, 1901, 164, 132-146.
2. THE JOURNAL, A. M. A., xxxv, 43. 3. Ibid., xxxvi, 908.

normal development of the three, possibly four, evaginations of the intestine which fuse to form the pancreas, the main mass being formed by the ventral evagination, the dorsal evaginations normally forming only the head. The ducts of Santorini, which are found quite frequently in the head of the pancreas, may be regarded as remnants of the originally independent dorsal evaginations.

THE INFLUENCE OF OPERATION PER SE.

All surgeons of experience will have observed, and all readers of medical literature will be familiar with the fact, that not infrequently operative intervention is attended with results of a successful nature that can not be attributed directly to the measures practiced—in fact, sometimes only the preliminary steps are taken—but must be ascribed to some obscure action arising out of the exposure to light and air and other physical and mechanical influences; or else they must be considered coincidental. That such results are merely coincidental would seem negatived by the frequency of their occurrence; and for the present we must accept the fact and await the explanation. Perhaps the most conspicuous illustration of the condition under discussion is the subsidence of the symptoms of tuberculous peritonitis after abdominal section, with or without considerable manipulation of the serous membrane or irrigation of the abdominal cavity. In the same way, after operations on the skull for the relief of epilepsy, in which no obvious lesion is found, the attacks may for a long time remain in abeyance. At times, also, the exposure of supposed malignant neoplasms that are found to be insusceptible of extirpation is sometimes followed by a cessation of growth and possibly a long period of latency. Of this last condition a most instructive instance is reported by F. B. Jessett,[1] in which, following gastrojejunostomy for the relief of vomiting and other symptoms associated with the presence of a tumor the size of a small cocoanut, completely occluding the pylorus and presenting the naked-eye appearances of a scirrhous carcinoma, the patient lived for eleven years, and on postmortem examination the tumor previously present was found to have disappeared. The patient was a woman, 56 years old, who had lost flesh rapidly and had suffered from intense pain. The tumor remained demonstrable for a long time after the operation, though gradually diminishing in size. Death resulted, as stated, after an interval of eleven years, from apoplexy, and on autopsy the stomach was found to present typical hour-glass constriction about its center, being adherent in this situation to the left lobe of the liver. At the constricted portion of the stomach the opening between the two resulting pouches barely admitted one finger. In addition to the communication artificially established at the operation, the pylorus, which was situated immediately behind the constriction, was still patulous, though somewhat constricted. A somewhat similar case has been reported by Demoulin and Tuffier[2] in which a hard swelling as large as an orange and thought to be a malignant growth developed in the epigastrium. On operation a tumor that felt like a fatty growth was found about the pylorus and the adjacent parts of the stomach, and gastroenterostomy was performed. On the twentieth day after the operation the tumor could no longer be felt on palpation and the patient regained his usual health.

1. Lancet, April 6, 1901, p. 1005.
2. Bull. et Mém. Soc. de Chir. de Paris.

Medical News.

COLORADO.

Sufferers from tuberculosis are excluded from the public schools of the state by order of State Health Commissioner Clough, promulgated April 15.

A "healer" of Denver, who claims kinship to Jacob and Moses, and the power to cure disease by sending "vibrations to any distance," recently pleaded guilty to improper use of the mails and was fined $25.

Gross Medical College, Denver, held its fourteenth annual commencement exercises April 25, graduating a class of fifteen. The doctorate address was delivered by Rev. R. F. Coyle, on "The Making of the Twentieth Century Man."

ILLINOIS.

Dr. Charles E. Crawford has been elected health commissioner of Rockford.

Dr. D. M. Landon, Burton, has been appointed surgeon of the Soldiers' Home, Quincy, vice Dr. John J. Golden, Mt. Vernon.

Dr. Chauncey H. Wilder, DeKalb, has been appointed first lieutenant and assistant- surgeon in the National Guard, and assigned to the Third Infantry.

The State Board of Health met at Springfield, May 11, and elected Dr. Charles B. Johnson, Champaign, president; Dr. James C. Sullivan, Cairo, vice-president, and Dr. J. A. Egan, secretary.

Chicago.

The proposed hospital for consumptives has received thus far for its building fund, $22,983.50.

The Post-Graduate Medical School has elected Drs. Carl H. Andersen and Gordon G. Burdick associate professors of surgery.

The Chicago Surgical Society gave a dinner in honor of A. W. Mayo Robson, of Leeds, Eng., at the Chicago Athletic Club, May 15.

The Chicago Eye, Ear, Nose and Throat College has moved into its new quarters at Washington and Franklin streets. There is a commodious hospital and dispensary in connection with the college. It is located centrally and hence has no difficulty in obtaining suitable clinic material.

Dr. William Osler, Baltimore, Md., addressed the joint meeting of the Chicago Medical and Chicago Society of Internal Medicine May 15, on "The Natural Method of Teaching the Subject of Medicine." The annual banquet was given in the Auditorium the following evening.

Water Supply and Death-Rate.—It is hoped by the Department of Health that interest in the street-watering proposition will not be allowed to die out. From a sanitary standpoint running water is never wasted. It is the great diluent and purifier and the more of it that runs through the sewers the better for the public health. The comparison of Chicago's supply per capita with Boston's which has been made during the week, should be coupled with a comparison of the death-rates of the two cities. Last year the Massachusetts town, which is cited as a model of sanitary development, had a death-rate of 20.82 per 1000; Chicago's death-rate, on the same basis, was 14.68 per 1000, or nearly 42 per cent. less. It is not claimed that this great saving of life was due solely to the abundant water supply, but it undoubtedly helps.

Statement of Mortality.—The deaths for the week ended May 11 were 471, equivalent to an annual death-rate of 13.97 per 1000. The deaths of persons over 60 years of age were 109. Though there were 95, or one-sixth, fewer deaths recorded last week than during the week previous the death-rate among the aged still remains abnormally high. During the previous week the proportion of deaths among those over 60 years of age was 23.6 per cent. of the total deaths, and last week it was 23.1 per cent. This is an average of nearly 28 per cent. higher than the normal death-rate for this age with the present constitution of the Chicago population. With the increasing age of the popu-

lation this rate also naturally increases; in 1890 it was 12.2 per cent. of the total mortality, and ten years later it was 18.2 per cent.—an increase of nearly 50 per cent., or an average of 4.9 per cent. yearly. But this increase is by no means uniform; the panic of 1893 increased the rate by 7 per cent., it increased abnormally during the Civil War and again after the great fire of 1871. There has never before, however, been such an increase as the present, and a glance at the causes of death shows it to be due to what have come to be called the group of "American diseases"—Bright's disease, heart disease and diseases of the nervous system, the result of the rapid pace of American life. This is a matter over which sanitary administration has no control and the Health Department can only state the facts and point out the causes. The deaths from violence were 30, of which 12 were suicides, and respiratory diseases caused 164 deaths, including those from diphtheria and scarlet fever.

KANSAS.

Dr. Hubbard Linley, Atchison, has purchased a one-seventh interest in the Central Medical College, St. Joseph, Mo., and has been elected to the chair of abdominal surgery.

Smallpox.—Dr. W. B. Swan, secretary of the State Board of Health, has issued his smallpox report for April giving the total number of cases in the state as 1084, with 5 deaths.

Dr. John B. Dykes, Lebanon, has been appointed a member of the Kansas State Board of Health, by Governor Stanley, vice Dr. Samuel W. Williston, Lawrence, resigned.

State Board of Medical Registration and Examination.—The governor has selected the following as members of the board from lists submitted by the State Medical Society: Dr. Samuel W. Williston, Lawrence, for 4 years; Dr. Orson F. Lewis, Hepler, for 4 years, and Dr. George F. Johnston, Lakin, for 2 years.

KENTUCKY.

Dr. W. C. Black, Barbourville, major-surgeon of the Second Regiment, Kentucky State Guard, has resigned.

Burglars entered the house of Dr. J. N. McCormack, Bowling Green, May 8, and stole a valuable gold watch and chain.

Dr. W. Ed. Grant, Louisville, has sailed for Europe, to be gone four months, and Dr. J. Garland Sherrill, Louisville, will sail for Europe June 1 for a three months' tour.

Banquet to Dr. Hare.—A banquet will be tendered Dr. Hobart Amory Hare, of Philadelphia, upon the occasion of his visit to Louisville, by the profession of the city. He comes to Louisville upon the invitation of the Medico-Chirurgical Society and will deliver an address.

Medical Student Murdered.—W. L. Royse, a member of the graduating class of the Kentucky School of Medicine, was fatally stabbed by the janitor of that institution on the afternoon of the 9th. The janitor was intoxicated and noisy; an attempt was made by Royse to make him leave the building when, before the bystanders could interfere, he stabbed Royse in the breast, killing him instantly. An examination by the coroner showed that the blade severed the arch of the aorta.

LOUISIANA.

New Doctors.—The State Board of Medical Examiners held examinations, May 2 and 3, at Tulane Medical College, New Orleans, and granted licenses to practice to 70 of the 95 applicants.

Dr. Arthur Weber, New Orleans, who was recently elected a member of the City Board of Health, may be decided to be ineligible because there are already three physicians on the moard and in the act creating the board it is stated that it shall consist of "five persons . . . . Three of the persons shall, if practicable, be duly registered and licensed physicians."

Tulane Medical College, the medical department of Tulane University, New Orleans, held its sixty-seventh annual commencement, May 1 and graduated a class of 115. In honor of the fiftieth anniversary of his connection with the institution Dean Stanford E. Chaille was made LL.D. In his address, Professor Chaille remarked that the medical and pharmaceutical graduates of the university numbered 3841, all but 768 of whom had been graduated during the time of his official service. Hon. Hannis Taylor, LL.D., delivered the doctorate address on "The Relation of the Medical Profession to International Law."

MARYLAND.

Baltimore.

The State Board of Medical Examiners (regular) held its semi-annual examinations in Baltimore, May 15-18.

Maryland Medical College, the sixth of the medical schools of Baltimore to hold its commencement, graduated a class of thirty, May 15.

Dr. J. B. McCallum, of the Johns Hopkins Hospital, Baltimore, sailed for Europe, May 8, to pursue special studies abroad.

Dr. George W. Todd has resigned as superintendent of the Peninsula General Hospital at Salisbury, but will continue as a member of the medical staff. The directors are formulating a plan of reorganization to place the institution on a broader plane.

Association of American Institutions for the Care of Feeble Minded Persons, representing all such institutions in the United States and Canada, held a three days' session in Baltimore, May 16. On May 17 the delegates were entertained at the Maryland Institute for Feeble Minded, at Owings Mills.

Typhus Fever.—Two cases of this rare disease were discovered in the city last week. They were Lithuanians, and one died. The disease developed at Sparrow's Point, a river suburb of Baltimore, and probably resulted from contact with some sailors who had visited there. The cabin which they occupied was burned by the health authorities.

MICHIGAN.

Dr. Frederick W. Mann, Detroit, has been appointed surgeon-in-chief of the Michigan Central railroad, vice Dr. Donald Maclean, resigned on account of ill-health.

Detroit College of Medicine held its thirty-third annual commencement, May 9, and graduated a class of forty-five. Dr. William M. Donald, Detroit, delivered the address to the graduating class.

A mandamus was granted by the supreme court compelling Dr. Beverly D. Harison, Sault Ste. Marie, secretary of the State Board of Health, to recognize the authority of the newly-constituted State Board of Registration in Medicine.

Dangerous Communicable Diseases.—Including reports by regular observers and others, cerebrospinal meningitis was reported present in Michigan during the month of April, 1901, at 11 places; whooping-cough at 25 places; diphtheria at 55; measles at 62; typhoid fever at 69; smallpox at 139; scarlet fever at 153; and consumption at 209 places.

April Mortality.—There were 2999 deaths reported as occurring in Michigan during the month of April, equivalent to a death-rate of 15.3 per 1000 per annum. This number is 489 less than the number reported for the preceding month and 47 less than the number of deaths returned for April, 1900. There were 497 deaths of infants under one year of age, 175 deaths of children aged one to four years, inclusive, and 884 deaths of persons aged 65 years and over. Important causes of deaths were as follows: Tuberculosis, 241; typhoid fever, 32; diphtheria and croup, 42; scarlet fever, 17; measles, 5; whooping-cough, 15; pneumonia, 361; influenza, 142; cancer, 101; accidents and violence, 132. The principal decline for the month was shown in the deaths from pneumonia and influenza, which were considerably less than those reported for March. Small amounts of decrease were also shown in the deaths from typhoid fever and scarlet fever. For the first time in some months, no death from smallpox was reported.

MINNESOTA.

Clinton Hospital was destroyed by fire May 2.

St. Luke's Hoepital, Duluth, has received a donation of $5000 from John D. Rockefeller, and $1500 additional from the employees of the Mesaba road.

A State Sanatorium Commission has been appointed by the governor to select a site for the new sanatorium. It consists of Drs. George S. Wattam; H. Longstreet Taylor, St. Paul, and James L. Camp, Brainerd.

The Swedish Hospital authorities have accepted the plans offered by L. A. Lamoreaux in competition and will proceed at once with the erection of a hospital building at Eighth Street and Tenth Avenue, South, to cost about $40,000.

Physician Arrested.—For neglecting to notify the health authorities of a case of scarlet fever, a Minneapolis physician has been arrested, and an osteopath in the same city has been indicted for failing to report a case of smallpox, which he diagnosed as typhoid fever.

NEBRASKA.

Dr. Joseph H. Boyes, Hebron, has been appointed city physician.

Creighton Medical College, Omaha, graduated a class of twenty-eight, May 6. The doctorate address was delivered by Dr. Walter O. Henry.

Bishop Clarkson Memorial Hospital for Children, Omaha, has received a bequest of $3000 to endow a bed, from the estate of the late Maria Sheldon Scammon.

NEW JERSEY.

New Hospital for Insane.—The new county insane asylum at New Lisbon is almost completed and the patients at Trenton will be transferred during May.

The Children's Seashore House at Atlantic City will reopen on June 1. During its incorporation it is stated that 22,000 patients have been cared for, and have been admitted without regard to creed, color, or nationality. This institution is dependent for its support on voluntary contributions.

Scarlet Fever in Pensauken.—The health authorities of Merchantville are much exercised over the existence of scarlet fever in Pensauken township, and it is feared that the disease will become more widespread unless the board of health of the latter place adopt more aggressive measures.

Smallpox.—Certain districts of New Jersey are at this time battling against smallpox. For two weeks past its presence has been known in Gloucester. At first the disease was pronounced chicken-pox, but as the patient died, the nature of the trouble became manifest. After the recognition of this case a search was made, and fourteen cases of smallpox found. It is now stated that the initial symptoms and signs were those of chicken-pox, which caused it to exist for some time before steps were taken to prevent it from spreading. It was decided to close the public schools as a precautionary measure. As a result of this state of affairs in Gloucester every practicing physician was ordered to appear before the board of health to explain why he had not complied with the law requiring that such diseases be reported. On May 8 two more deaths occurred from the disease, while 3 new cases were reported. On this date 600 employees in one factory were vaccinated. On May 6 three new cases of smallpox were found ten miles east of Vineland. It is believed that in this instance the disease was brought from New York. On May 4 a colored man from Haddonfield was taken to the Camden jail, where it was found that he was suffering from smallpox. This created a panic among the other inmates, which at this time has not entirely ceased. The jail has been placed in quarantine. The Camden City Medical Society, at its meeting May 7, passed resolutions commending the county physician and health authorities in their promptness in restricting the disease. On May 10 no new cases had been reported. The county almshouse and asylum at Blackwood has been placed under quarantine.

NEW MEXICO.

Dr. J. O. Cobb, U. S. M.-H. Service, Alamogordo, has been ordered to San Francisco, Cal., to make a report on bubonic plague.

Delegates to Tuberculosis Congress.—Governor Otero appointed the following physicians to represent New Mexico, as delegates to the American Congress of Tuberculosis, held in New York City, May 15-17: Drs. James J. Shuler, Raton; John H. Sloan, Santa Fé; E. B. Shaw, Las Vegas; George W. Harrison, and Francis Crosson, Albuquerque; C. G. Cruikshank, San Marcial, and George W. Bryan, Alamogordo. Dr. Crosson, Albuquerque, presented a paper on "The Sanatorium Treatment of Tuberculosis in New Mexico."

NEW YORK.

Dedication of Sanatorium for Consumptives.—On Memorial Day, Governor Odell, Vice-President Roosevelt, and other notable persons will assist in the dedication of the new sanatorium for consumptives belonging to the Montefiore Hospital. This sanatorium will accommodate 150 patients, and will be free. It is situated at Bedford Station, Westchester County.

Broadcast Distribution of Samples.—The Board of Health at Lockport is taking action against the pernicious traffic of leaving samples of dangerous nostrums at the doorsteps of houses. Two deaths have recently been attributed to taking these samples. A similar epidemic of sickness occurred among children in the east side of Buffalo, who ate sugar-coated pills in large quantities, thinking that they were candies.

Buffalo.

Dr. W. Scott Renner, who has been in Berlin for the past two months, has returned to Buffalo.

Dr. William Warren Potter will deliver the doctorate address at the commencement exercises of the Hospital College of Medicine at Louisville, Kentucky.

The anti-expectoration ordinance prohibiting expectoration on the floors of street-cars, public buildings or in any public assembly place other than streets, sidewalks or parks is now a law. The maximum punishment is a fine of $100.

Civic Sanitation.—Health Commissioner Wende has addressed a communication to the police and to the medical profession of the city asking their co-operation in maintaining a proper sanitary standard in the city during the Pan-American Exposition, and to be on the alert for any contagious disease, especially smallpox.

Dr. Ebenezer Johnson's Grave.—In connection with the disinterment of bodies from the old North Street Cemetery in anticipation of using the site for the erection of a state armory, it is a curious fact that there seems reason to doubt the location of the remains of Buffalo's first mayor, a physician, Dr. Ebenezer Johnson. A movement is now on foot for the erection of a suitable monument in his memory.

New York City.

Drunkenness in Bellevue.—Although strenuous efforts are being made to reform the service at Bellevue Hospital drunkenness among the help has been unusually prevalent. Since March 1, 173 have been discharged because of intoxication, out of a total of 562 employees. It is asserted that sober, responsible help can not be secured for the wages paid—$10 to $12.50 a month.

Smallpox on the Increase.—Smallpox is rapidly on the increase in spite of the efforts of the Health Department. In the first six days of May 107 cases were reported, and since that time there has been a daily average of a dozen or more cases. During the entire month of April only 199 cases were reported. Every section of the city is represented. In addition, each ocean liner brings about 1000 immigrants, many of them Italians, and they are furnishing many of the new cases. As a result of a general order issued by the chief of police all policemen in the city have been vaccinated within the last few days.

New York University vs. Loomis Laboratory.—Judge Truax, of the supreme court, has handed down a decision which terminates the litigation that has existed since 1897 between the New York University and the Loomis Laboratory, or rather the "Medical College Laboratory." According to this decision, the University must transfer to the Medical College Laboratory property valued at $150,000. The New York University Medical College was established in 1841 and conducted independently of the University until the incorporation of the Medical College Laboratory in 1883. The new corporation carried on the school until Feb. 8, 1897, when the property was deeded over to the university without conditions. Judge Truax holds that the sole consideration for this transfer was the promise to leave the control of the school to the grantor, that this promise has not been kept, and that as a contract can not be repudiated and the one doing so keep what has been obtained under it, the university must return the property. The opinion also holds that the Loomis Laboratory, now connected with Cornell University, is not held in trust for the New York University.

OHIO.

The Cincinnati College of Medicine and Surgery held its fiftieth annual commencement exercises May 1, and graduated a class of sixteen.

Dr. Phineas S. Conner, professor of surgery in the Medical College of Ohio, and surgeon-in-chief to the Good Samaritan Hospital, has been appointed by the Superior Court a member of the Board of Trustees of the Cincinnati Hospital.

Cleveland College of Physicians and Surgeons held its fortieth annual commencement May 1, and conferred degrees on fifteen. Rev. Morgan Wood, D.D., in his address to the graduating class, reviewed the progress of medicine during the last half century.

H. M. Hanna Research Fellowship.—Mr. H. Melville Hanna, Cleveland, has given $12,000 to the Medical Department of Western Reserve University, the income of which is to be paid by the occupant of the fellowship, who shall devote himself to specific original investigation in physiology or pathology under the guidance and approval of the heads of those departments.

Resignation of Dr. Rutter.—Dr. H. C. Rutter, manager of the Ohio Hospital for Epileptics, Gallipolis, has been requested to resign by Governor Nash. It is reported that Dr. Rutter's summary discharge of Dr. Albert P. Ohlmacher, pathologist to the hospital, was the cause of this action on the governor's part. Dr. Ohlmacher, in a circular letter, asks the opinion of the profession of the state regarding the continuance of the work of the laboratory.

PENNSYLVANIA.

Board of Health Discharged.—On May 7 the town council of Norristown dispensed with the services of the board of health of that city. A committee was appointed several weeks ago to investigate charges made against them, and failing to appear before council, this last action has been taken.

Dr. Hallie L. Ewing, Hastings, Neb., has been elected assistant physician in the women's department of the State Insane Asylum at Norristown. Dr. Ewing is a graduate of the University of Michigan, and has recently been connected with the Hospital for the Chronic Insane at Hastings, Neb.

Philadelphia.

The Medical Club of Philadelphia has issued invitations to a reception given at the Hotel Bellevue, May 23, in honor of Surgeon-General Walter Wyman, United States Marine-Hospital Service.

Dr. Alfred C. Croftan has accepted a position in connection with the Pepper Laboratory of the University of Pennsylvania, and has moved from Pasadena, Cal., to Philadelphia.

Dr. S. Lewis Ziegler has been appointed surgeon to the Will's Eye Hospital, to succeed Dr. George C. Harlan, resigned. Dr. Ziegler is a graduate of the University of Pennsylvania, class of '85, and has been assistant surgeon to the Will's Eye Hospital for the past seven years.

Dr. Thomas R. Neilson has been elected clinical assistant professor of genito-urinary diseases in the University of Pennsylvania. Dr. Neilson is a graduate of the University, class of '80, is secretary of the College of Physicians, and is connected with several hospitals of this city.

Nathan Lewis Hatfield Prize.—The committee on the Nathan Lewis Hatfield prize for original research in medicine, of the College of Physicians, of Philadelphia, has awarded to Professor H. F. Harris, M.D., of Atlanta, Ga., $500 for an original research, conducted at the instance of the committee, entitled: "A Study of the Alterations Produced in the Large Intestine of Dogs by the Ameba Coli, by Heat, and by Various Chemic Substances, with Notes on the Anatomy and Histology of the Viscus."

Anniversary of Pennsylvania Hospital.—The celebration of the 150th anniversary of the founding of the Pennsylvania Hospital occurred May 1. The ceremonies began by an address from the president of the board of managers, who gave a review of the past history. Of nine representatives of Pennsylvania who signed the Declaration of Independence, two—Benjamin Franklin and John Morton—were for some time managers of the hospital, while Benjamin Rush served as a physician upon its staff for twenty-nine years. Among other eminent physicians who served on its staff and have only recently passed away are Drs. William Pepper, John Ashhurst, Jr., and Jacob M. DaCosta. The board has been reorganized as follows: Mr. Benjamin Shoemaker, president; James T. Shinn, secretary; Daniel D. Test, superintendent and steward; and Dr. John B. Chapin, superintendent of the insane department; Dr. Charles F. Mitchell succeeds Dr. Francis T. Stewart as chief resident physician. The medical staff has been filled by the appointment of Dr. Alfred Stengel to succeed the late Dr. J. M. DaCosta, and the surgical staff by the appointment of Dr. Robert G. LeConte to succeed Dr. Thomas G. Morton. Dr. Simon Flexner succeeds Dr. Henry W. Cattell as pathologist. Dr. Francis T. Stewart was appointed surgeon in the outpatient department to succeed Dr. Robert G. Le Conte, who was promoted to the surgical staff. The Pennsylvania Hospital is the oldest hospital in America, and its property is worth several millions of dollars.

Emergency Detention House.—For the purpose of detaining persons in Philadelphia who may land from foreign ports, the State Quarantine Board has established an emergency house at Marcus Hook, capable of accommodating 500 persons. In this way the station will be enhanced in value in its work to prevent infectious or contagious diseases from gaining a foothold. The barracks consist of a frame building in which patients may be properly isolated. The pest-house with the crematory has been formally turned over to the officials of the State Quarantine Board. It is believed that this station is the second oldest in the world. The following statistics have been given out relative to the work done at this port during the past two years: Vessels inspected and passed, 2829; vessels spoken and passed, 180; vessels detained for observation, 34; vessels disinfected, 10; passengers inspected and passed, 35,509; passengers and seamen detained for observation and disinfection, 708; medical and surgical cases treated, 458; total number of vessels inspected, spoken and disinfected, 3053. The station is open day and night, and is in charge of fourteen attendants, including the crew at the tug station. The physicians are Drs. John B. Ward, and L. T. Kennedy. The quarantine grounds are enclosed by a high fence and visitors are rigidly excluded.

GENERAL.

Another Sacrifice to Dowieism.—On May 13, a parturient woman died in Chicago from hemorrhage after an illness of two or three days, during which the only treatment employed was laying on of hands and prayer, both of which proved ineffective. Her infant also suffered martyrdom. Even the presence and prayer of Dowie himself are said to have been unable to cause hemostasis. Medical aid was refused, and the woman died. Her body was spirited away and embalmed by a convenient undertaker, but now the case is in the coroner's hands and a full investigation is promised.

Uniform Medical Legislation.—Dr. Emil Amberg, Detroit, secretary of the Committee on Interstate Reciprocity and Uniform Medical Legislation of the National Confederation of State Medical examining and Licensing Boards, recently issued a short article on the subject. In brief, he summarizes the conditions which render uniformity of medical laws difficult, emphasizing especially the discrimination of states against medical graduates of other states, the non-uniformity of medical teaching, of length of course and requirements for matriculation and graduation, and the fact that many medical schools are the property of corporations, for the benefit of the few. One of the most serious questions to be considered is the manifest overcrowding of the profession. It is reported, he says, that there is one physician to less than 600 inhabitants in the United States; whereas the ratio in Great Britain is one to 1100, and in Russia one to 8500. There are in the United States, proportionately, six times as many practitioners as in Italy, about four times as many as in France and in Germany, and there are about 156 medical schools in our country to 20 medical schools in Germany. In aiming at "interstate reciprocity for the license to practice medicine and at uniform medical legislation" all points mentioned, besides others, must be considered.

CANADA.

Dr. Donald Hingston, son of Sir William Hingston, has been appointed superintendent of the Hotel Dieu Hospital, Montreal, to succeed Dr. St. Jacques, resigned.

Appointments.—Dr. C. M. Stewart, of Toronto, has been elected to fill the position of medical superintendent of the Protestant Hospital, Ottawa, and Dr. Richardson, of Brockville, has been appointed house surgeon.

Western University.—The spring examinations of this institution which is situated at London, Ont., were concluded on May 4. The past session has been the most successful in the history of the medical department, the increase in attendance having been most gratifying. Thirteen were graduated.

Medical Examinations.—Medical examinations began at Trinity University on May 10. Fifty-eight are writing on the final examination and forty-six at the primary. At Toronto University, fifty-three are writing in the final year, fifty-three in the third year, one hundred and three in the second, and one hundred and fifteen in the first.

Damages for Slander.—In a northern town two Ontario practitioners have been at loggerheads, owing to the younger one cutting into the practice of the older. A patient recently died under the care of the younger and the older offered to bet $50 to $100 that if a postmortem were made it would be found that the man had received the wrong treatment. Suit for damages for slander was brought by the younger, and the defendant had to pay $200, the judge stating he would have allowed the full amount asked for ($1,000), but for special circumstances.

The Janitor at McGill.—On Saturday morning, May 3, the medical building of McGill University was the scene of the annual presentation to Mr. Cook, the boys' best friend at McGill. "Cookie" was uniformed as usual in a dress suit of huge dimensions. He was presented with an address, in which all his beauties and achievements were eulogized and glorified. What was more acceptable, however, was a barrel of copper coin, from the boys of '03. It contained some $35, to which Cook made an elaborate reply in Shakespearean verse. A procession was then formed, and Cook was marched around Montreal all morning.

Canadian Nurses' Association.—The bill to incorporate the Canadian Nurses' Association came before the House Private Bills Committee on the 9th inst., when the Hon. James

Sutherland advised that it be left over for another session, as it was discriminating against the smaller hospitals. This, Mr. Clark, of Toronto, objected to. Mr. Sutherland explained that he objected to a committee of nurses passing on applicants for membership, insisting that a medical board should conduct the examinations. He presented correspondence in support of his contentions. The bill ought to be redrafted. Eventually a series of amendments were proposed; and as the bill now goes to the house, the nurses are given exclusive power to conduct their affairs, but they are not permitted to say who shall not become members. The graduates of any incorporated hospital are eligible for admission, but a candidate may be required to pass an examination before becoming a member of the order. For this purpose power is given the president of each provincial council in Canada to appoint a board of physicians who shall examine candidates whose names are submitted.

Sir William Hingston.—A very pleasing demonstration took place at the Hotel Dieu Hospital, Montreal, on the 6th inst., the occasion being the fortieth anniversary of Sir William's entering the hospital as a surgeon. Sir William has now reached his seventy-third year, but still continues in active practice, having only that day performed two difficult operations at the hospital. The ceremonies opened with celebration of mass in the chapel of the hospital by Archbishop Bruchesi, after which the surgeons of the hospital presented Sir William with an address accompanied by an urn of great value. The students of Laval University then gathered in the operating room and presented their esteemed professor with an address, and Lady Hingston with a splendid bouquet. Then the sisters of the institutions also paid their respects to Sir William and presented him with some relics brought from France by Mlle. Mance over two hundred years ago, and still preserved by her successors. The party then proceeded to one of the large halls extemporized for a dining room, where an enjoyable time was spent. They then repaired to one of the larger wards, where the patients were assembled. Dr. St. Jacques, in the name of the patients thanked Sir William for the many services he had rendered them during his forty years' connection with the hospital. Sir William, in replying expresssed his surprise at receiving thanks from the patients when he had always been engaged in cutting off their arms or legs or taking out their eyes. However, he thought that he had never performed an operation in all his life which he did not think in the interests of the patient. Thus terminated a most pleasing event in the history of medical work in the city of Montreal.

FOREIGN.

Plague in India.—The average number of deaths per week in India from this disease is approximately 11,000. It is decreasing in the southern part of the country.

Prime Minister Waldeck-Rousseau, of France, on account of the alarming spread of diphtheria, has issued a circular urging the prompt application of the antidiphtheria serum.

The painters of Grenoble, France, have instituted a strike against all their employers who use white lead (carbonate of lead); they demand the use of zinc white (commercial oxid of zinc), which is not poisonous.

Plague at Cape Town.—Up to May 13 there have been 610 cases of the bubonic plague, and 275 deaths. A large proportion of the cases have been Europeans, which evidently accounts for the comparatively low death-rate.

Death of Dr. H. Napias.—Paris has lost a prominent figure in Dr. H. Napias, who has been at the head of the department of "Public Assistance" since 1898. He died March 7 in his sixtieth year. He founded the "Société de Méd. Publique et d' Hygiène Professionelle" in 1874, and most of his numerous works were in the line of professional diseases and public hygiene. He recently published a quarto of 834 pages entitled "L'Assistance Publique en 1900."

Professor Kohlstock, whose death is reported from Tientsin, where he was chief of the German medical staff, was recognized as an authority on tropical diseases and sanitary organization. He accompanied the East African campaign of 1889, and was Koch's companion in his expedition to South Africa to study the cattle-plague. Kohlstock personally superintended the vaccinations which resulted in the extermination of the cattle plague in the German provinces. He had been decorated with sveral orders.

Dr. Jean Foustanos, of Syra, Greece, has been decorated with an order conferring knighthood, by the government of Greece. Besides numerous important works on diseases in Greece, venesection, etc., he has founded and edits two medical journals, one in Greek, which records the transactions of local societies and reviews foreign literature for the benefit of his countrymen; the other is published in French and presents to the scientific world the chief results of the works of members of the profession in Greece and Asia Minor. Both commenced modestly, but are constantly increasing in size and influence.

Deaths Abroad.—Other deaths reported are those of Dr. T. Wynen, assistant at the Marburg Institute of Hygiene, a victim of professional infection.——W. von Heineke, professor of surgery at Erlangen and one of the board that publishes the *Muenchener Med. Woch.*——The Italian papers state that Dr. Gibelli, of Cagliari, was shot by a nurse at the surgical clinic. ——Dr. Curel, of Cagnes, was stabbed by a former patient, and Drs. Ambrosi and Massari, of Naples, were assassinated in their sleep by an attendant.——The death of Dr. Panzeri, is announced, founder of the Milan Orthopedic Institute and of the *Archivio Ortopedico.*——Professor Sacchi, of Genoa.

PARIS LETTER.

Tuffier's Latest Article on Cocain Anesthesia.

Dr. Tuffier has kept his promise about answering the arguments brought against his method of anesthesia, and in the *Presse Médicale* of April 24, he has sought to justify the technique that he is now using at the Beaujon Hospital. In the article, that he published, he admitted that Leonard Corning was the first to have used the method. He had read his different memoirs on the subject and followed the speeches he had made before the Society of Surgeons of New York. He said he did not approve the manner in which his American colleagues had taken up the cudgels in his behalf, though he admitted that they were right in claiming the discovery. Corning had discovered this method of producing analgesia, he had seen its limits, its extent, the phenomena that accompany it and he had spoken of its application to surgery. But his memoirs remained ignored on the shelves of libraries. Still Tuffier added that he should not be influenced by the large number of German publications, nor feel the ironical comments that might be made, as he was quite willing to admit that Corning's name was inseparable from the history of intrarachidian cocainization. The chief merit of Bier is that he used this method for surgical operations, but Dr. Tuffier added that if he himself had been obliged to use his technique, he would not have dared to make any injections. Dr. Tuffier then went on to describe his operation and he insisted on the following points: the patient should receive the injection outside the operating room; the needle should be very small, and not have too long a point; the solution should be a 2 per cent. one of cocain. Dr. Tuffier tried ordinary saline solution, without any result; eucain, which he found had all the disadvantages of cocain without showing so great power; tropococain, which he tried on the recommendation of Schwartz, and which he found too weak. The puncture should be done on a level with the line which joins the two iliac ridges and the injection made very slowly, more than a minute being taken to inject one gram of liquid. Dr. Tuffier remarked that at the International Congress he had described the different accidents that might be seen, such as vomiting and headache. But as for cases of death during the operation, when Dr. Tuffier's technique has been carried out not a single one can be adduced. As for the six cases of death published by Dr. Reclus, there are two, those of Jullien and Tuffier, which prove doubtful even for Dr. Reclus; as for the other four, the first was just punctured and did not get a single drop of cocain, but died of tubercular meningitis; the second died six days after the operation from acute tuberculosis; the third died after an amputation and there was no autopsy. The same degree of uncertainty can be felt about Jonnesco's and Keen's cases. Dr. Tuffier ended his article by saying that he did not wish to defend intrarachidian injections against all other methods. He had lost but one patient from chloroform, so that he had no aversion to general anesthesia. He considered that this new means of anesthesia should be used in a limited number of surgical operations.

Cocain Injections in Therapeutics.

Several new cases of treatment by cocain injections were cited by different members of the Society. Dr. Marie spoke of a patient suffering from lumbago, who was cured in eight minutes by an injection of 5 milligrams of cocain. But in a case of recent neuralgia of the scapular region and in one of subacute rheumatism of the lumbar region, there were no results. Professor Debove said he considered lumbar puncture too delicate an operation to be used as yet in the treatment of lumbago, and as Dr. Merklen remarked, small saline injections

give results which are just as good. Professor Debove cited two cases, where lumbar puncture was of benefit in the treatment of gastric crises such as are seen in locomotor ataxia. A patient, suffering from acromegalia, was punctured while having an attack of this sort, and the pressure in the intrarachidian space was so great that a jet of liquid came out. About 30 c.c. were evacuated and the pain ceased. In a case of tabes the result obtained was as surprising. It should not be thought, however, that a radical cure can be obtained in this manner. Dr. Achard spoke of a case of abdominal zona where the pain was much relieved by the use of an intrarachidian injection of 2 centigrams of cocain, and also of a man suffering from syphilitic myelitis and consequent painful priapism, who was relieved of this latter symptom by an injection of one centigram of cocain.

Bier's Communication to the Berlin Congress.

One of the most important communications made at the Congress of Surgeons in Berlin was the address made by Dr. Bier. He admitted that he considered that the time had not as yet come for adopting it. His experiments were being carried out with certain objects in view—such as using eucain which has proved to be less dangerous than cocain. The brain and medulla oblongata should be protected as much as possible, and Dr. Bier has found it advantageous to place a rubber band around the neck without exerting too great a degree of constriction. This band is left in place two hours after the operation, but should not be used when there is any tendency to arteriosclerosis. Dilute solutions should also be employed, for instance 5 to 8 milligrams of cocain in 5 to 8 c.c. of pure water or water to which a certain amount of salt has been added.

French and German Methods.

Among the different communications made on other subjects, a certain number show that German and French surgeons are not of the same opinion on certain subjects. Most German surgeons, such as von Bruns, Limon, Czerny and Henle, consider that castration is the best treatment of tuberculosis of the testicle, whereas König, Gussenbauer and Bier believe in temporization before adopting such vigorous methods. German surgeons prefer vaginal hysterectomy in cancer of the uterus, and most of them believe it is best to defer the operation in appendicitis. Braun and Krause gave their statistics in the treatment of epilepsy by extirpation of the cervical sympathetic nerve, and the results adduced seemed far from satisfactory. Kocher gave a new series of a thousand operations for goiter with only fourteen deaths.

LONDON LETTER.

The Destruction of Rats on Shipboard by Sulphur Dioxid.

The fact that plague is conveyed by rats has led to the introduction of the following method of destroying them in ships. Sulphur dioxid gas is generated in a chamber in which sulphur is spread on a wire netting in the proportion of 1 pound to every 250 cubic feet required. The sulphur is ignited with the help of alcohol and the gas is pumped into the bottom of the space to be treated. A pipe from the top of the space brings air back to the generator. The oxygen in the treated space, for instance the hold of a vessel, is thus gradually replaced by SO_2. This gas being much heavier than air diffuses slowly and the rats retire before it. When the hold is opened they are found dead at the highest parts—those nearest the exit pipe. This is important because otherwise rats may die behind partitions. The only drawback of this method is the tarnishing of gilding.

Volvulus of the Ileum with Severe Intestinal Hemorrhage.

At the Clinical Society, Dr. J. H. Bryant described the case of a man aged 21 who was admitted to hospital with symptoms resembling intestinal colic which had come on after eating a large quantity of damson tart for supper. The lower abdomen was rigid and a hard mass was felt below and to the left of the umbilicus. During the next day the pain continued and in the evening, about 8 p. m., he became very collapsed and passed about a pint of bright-red blood and a large mass of undigested damson skins of about the size of a tennis ball. He was so blanched and collapsed that injections of strychnin and subcutaneous infusion of saline solution were ordered. During the night he continued to pass blood at intervals. On the following day he was still collapsed and became restless and delirious. He died on the fourth day. Just before death he brought up a large quantity of feculent fluid. Postmortem a volvulus of the ileum was found, 100 cm. of the gut being involved, the lowest portion of which was 10.5 cm. above the ileocecal valve. The wall of the gut was much thickened and felt edematous. The direction of torsion is from left to right. Dr. Bryant has not been able to find a recorded case of volvulus in which so much blood was passed per anum. Hemorrhage in any form of intestinal obstruction excepting intussusception is of exceptional rarity. After the occurrence of the hemorrhage and the collapse the patient was thought to be suffering from localized peritonitis and possibly mesenteric thrombosis or embolism. Volvulus was not suspected. Dr. Zum Busch remarked that he had met with a similar hemorrhage from intestinal obstruction in a case of hernia. A man aged 74 had a hernia which became irreducible. Herniotomy was performed to relieve the constriction. Next day he passed almost a pint of pure blood. On the sixth day after operation he died suddenly from cardiac failure. Postmortem, no lesion was found to account for the hemorrhage.

Ureteral Calculus Simulating Vesical Calculus.

Mr. F. J. Steward described the case of a man aged 24 who had suffered for three years from attacks of painful micturition with hematuria. A week before admission to hospital the pain became more severe and the urine scarlet, and continued so. On admission there was much blood and a little pus in the urine. There were severe pains in the perineum and at the end of the penis, both during and apart from micturition. There was neither pain, tenderness nor fullness over either kidney or ureter. The bladder was sounded and two radiographs were taken, but with negative result. The case was thought to be one of encysted vesical calculus. The bladder was inflated with air and opened above the pubes, when a stone was felt impacted in the right ureter 2 inches from the orifice. The stone could not be moved down the ureter, so the wound was closed. Later a second operation was performed. An incision was made in the lower part of right linea semilunaris and the abdomen opened. The stone was pushed up the ureter to a point just above the common iliac artery. The ureter was incised and the stone removed. The incision in the ureter was closed by a continuous suture passing only through the outer coats; recovery followed. The calculus was cylindrical and weighed 9 gr. and measured one-half by one-third inches. It consisted of uric acid with a small deposit of phosphates in some places. The chief point of interest is the complete simulation of the symptoms of vesical calculus, there never having been a single symptom of an unilateral lesion. The suprapubic cystotomy was rendered extremely easy by the air distension, the peritoneum being lifted well up and the bladder reached with very little disturbance of the cellular tissue. The absence of the usual flooding of the wound on incising the bladder is another advantage of this maneuver.

The Cause of Beri-Beri.

The cause of that mysterious tropical disease, beri-beri, appears to have been at last discovered. Captain E. R. Rost, I.M.S., civil surgeon of Meiktila, Burma, has been investigating the connection between beri-beri and a microbe found in rice and Jowari grain, and in the rice liquor which coolies and sepoys drink. He concludes that this microbe is the cause of the disease. But he is not the first to make this suggestion. In May of last year Mr. Charles Hose, D.Sc., who is not a medical man, but a naturalist, who has contributed largely to our national museums, has handed to Dr. Strangeways Pigg, of Cambridge, a paper in which he stated the results of investigations which he had been carrying on for some years in Borneo. He had suffered from the disease and it was mainly to this circumstance that was due his attention to the subject. He found that in Borneo the disease was much more prevalent among men than among women, that it was frequently contracted on a journey in the jungles of the interior, was more prevalent at certain seasons, and frequently occurred in outbreaks among Chinese coolies. The women in Borneo, who very rarely leave the villages for any length of time, live mainly on freshly husked rice, while the men are frequently absent in the interior on rubber-collecting expeditions for several months, and live on rice, which they carry in bags, and which becomes mouldy in the damp climate. Similarly the rice supplied in gaols has been kept in bags for considerable periods, and is often mouldy. By microscopic examination Mr. Hose found a fungoid growth on this mouldy rice. He then tried the experiment of feeding three monkeys *(macacus nemestrinus)* on old rice. Two of the three developed the characteristic nerve symptoms of the disease, but not the characteristic edema of the legs. Thirty-nine Dayaks, who had contracted beri-beri during their expeditions were placed in villages where only freshly-husked rice was used, 33 recovered and 6 died. On

the other hand, of 128 who continued to live on imported rice 47 died. Mr. Hose has forwarded to Cambridge specimens of this mouldy rice for examination. It is reported that beriberi has broken out among the Chinese coolies employed in Christmas Island, which owing to its isolation has only recently become inhabited. This offers a unique opportunity for the scientific study of the disease which it is hoped the Government will take advantage of.

Correspondence.

Adhesive Rubber Dam.

CHICAGO, May 14, 1901.

To the Editor:—In reply to the criticism of Dr. Fenton B. Turck, in THE JOURNAL dated May 6, I regret exceedingly that the Doctor does not distinguish between the aseptic *adhesive* rubber dam described in my article and the rubber dam, not adhesive, which he advocated in THE JOURNAL of June 9, 1900, or the one mentioned in the *Medical Record* of Aug. 11, 1900, "being held in place with straps and buckles," to use the Doctor's description; or the one mentioned in the *Philadelphia Medical Journal*, March 30, 1901, p. 622, which latter article was published after the dam which I described was made and used publicly in my clinic, and after I had promised my article to the editor of THE JOURNAL. The dam I describe is not put on with bisulphid of carbon cement, nor with any of the Doctor's several special cements made for that purpose. The desirability of material for the prevention of infection from the skin was not original with Dr. Turck nor myself. The trouble with the Doctor's dam is that it lacks the elements to make it stick. If he will give the profession the name of the manufacturer and the date of manufacture of his adhesive rubber dam similar to that produced by Johnson and Johnson, I think the profession will appreciate it. I would further refer him to my correspondence between Mr. Truax, Elwood Lee & Co., and Bauer & Black, in our efforts to secure the adhesive rubber dam described in my article. Very truly yours,

J. B. MURPHY, M.D.

Anesthesia During Sleep.

ST. LOUIS, MO., May 4, 1901.

To the Editor:—In view of the fact that I have not been able to find a recorded case of a sleeping individual being placed under the influence of an anesthetic without first awaking, and also from the medicolegal bearing which such a record would have—an expert medical witness in the recent trial in New York City in the Rice Will Case having stated that such a feat was impossible—I report three cases in which I succeeded in accomplishing such anesthesia:

CASE 1.—Dr. T. C. Witherspoon, professor of surgery in the Marion-Sims College of Medicine, St. Louis, requested me to give chloroform to a healthy boy of about 4½ years for a small operation. On arriving at the home we found the child asleep and I proceeded to administer the chloroform, and the child went under its influence easily; only once did he make a move, and that was to turn his face away from the mask.

CASE 2.—I was to operate for circumcision, on a healthy boy of 8 years. Being a somewhat refractious child, when I was ready to operate I told him I would give him a piece of money if he would go to sleep and not bother me, and within thirty minutes after lying down he was sound asleep and I started the anesthetic, which was chloroform. He went under the influence easily, excepting only one moment, when he turned his face away from the mask.

CASE 3.—A boy of about 7 years, healthy, had sustained an injury around his left shoulder joint, the nature of which was impossible to determine exactly on account of pain and the rebellious nature of the child. I accompanied Dr. C. E. Walker, physician in charge. The boy was asleep when we arrived and I requested that he be not awakened. I began the administration of the chloroform and succeeded in bringing him under its effects without his so much as turning the face away from the mask as the previous subjects had done. The child slept sometime afterward, about three hours, and when he woke up asked when the doctors were coming. He knew we were expected and fell asleep while waiting for us.

These three cases were all boys between the ages of 4 and 9 yars, the anesthetic being chloroform in each case, and at the time of their occurrence I was fresh from college, but had had considerable experience as an anesthetist. There being no difficulty encountered in any one of them I did not consider them out of the ordinary and do not think so yet.

P. G. PAUGH, M.D.

Association News.

Report of the Committee on Transportation.

The Committee on Transportation reports that the Central Passenger Association has changed its former ruling in the matter of rates for the medical meetings in St. Paul, Minn., May 30 to June 7, from one fare and a third, on a certificate plan, to the more favorable rate of one fare plus $2 for the round trip throughout its territory. The Association has not, however, agreed to the stop-off privilege at Milwaukee, but grants the time limit and restrictions agreed to by the Western Passenger Association, to July 15, thus allowing time for the excursion from St. Paul to the Yellowstone National Park. The Committee yet hopes to get a subsequent ruling favorable to this stop-off. The Trunk Lines and the New England roads are considering the requests of the committee in the matters of rates and time extension, and their action will be promptly reported in THE JOURNAL when received.—H. L. E. Johnson, M.D.; Miles F. Porter, M.D.; I. N. Love, M.D., Committee on Transportation.

Reception and Ball.

On the evening of June 6, the physicians of Minneapolis will give a reception and ball in honor of the members of the AMERICAN MEDICAL ASSOCIATION, at 8 o'clock. It will be held in the Armory and Campus of the University of Minnesota, Minneapolis. All the buildings of interest to physicians will be illuminated and open for inspection.

Reception to Women Physicians.

The women physicians of St. Paul and Minneapolis, Minn., will tender a reception to the women physicians attending the St. Paul meeting, on Tuesday evening, June 4. They are requested to register at the headquarters for women physicians, 140 Lowry Arcade, as early as possible.

Book Notices.

THE THEORY AND PRACTICE OF MILITARY HYGIENE. By Edward L. Munson, A.M., M.D., Captain Medical Department, United States Army. Illustrated by 8 Plates and Nearly 400 Engravings. Cloth. Pp. 971. Price, $8.00. New York: William Wood & Co. 1901.

This book fills a want which has been seriously felt since April, 1898, when the army increased from 25,000 to 250,000 men and its medical force had to be correspondingly augmented. The rapidity with which this increase was effected gave no time for the extension of a practical knowledge of military sanitation from the experienced medical officers of the army to the hastily organized medical force attached to the volunteer army. The want of a good text-book on military hygiene was then fully realized. It may safely be said that if a work of the kind now under review had been in the hands of our hastily enrolled volunteer medical officers in 1898 and had been carefully studied by them much sickness and suffering might have been prevented. The author writes with a facile pen and his discussions of controverted subjects are carried on in a manner which gives the reader an easy appreciation of the views inculcated. The ground also is thoroughly covered.

The book opens with a consideration of the average physical proportions of the United States soldier, the method of examining candidates for enlistment and the conditions which disqualify for the military service. The value of systematic physical training in the development of the recruit and the best means for effecting this are fully discussed. Greater attention

has been given to the importance of physical training by the military authorities of foreign armies than by our War Department. The author urges the establishment of special schools for the training of instructors in gymnastics and physical exercises and the appropriation or allotment of money for providing and maintaining an adequately equipped gymnasium at every military post. Such preparation enables the soldier to undergo the fatigues and exposures incidental to active service with less risk of breaking down under them.

The water supply, rations, clothing and equipments of the soldier are next considered. The chapter on water deals only with the conditions met with in military practice. Hence no space is given to slow sand filtration or to mechanical filtration with alum as a coagulant as methods of purification, these being of more interest to the municipal hygienist than to the military sanitarian; but the filters used by our troops during the Spanish-American War, the Berkefeld, the Pasteur-Chamberland and the Maignen filters are described and illustrated, together with the Waterhouse-Forbes sterilizer now furnished to many of the commands on duty in the Philippines. The ration is exhaustively discussed even to the cooking of its various constituents, particularly on field service and the subject is taken up from another point of view in a subsequent chapter on the hygiene of hot and cold climates. Camps and their sanitary administration are well illustrated by diagrams and engravings of tents, huts, latrines and crematories for garbage and excreta. Posts, barracks, quarters and hospitals are also well illustrated by plans and engravings. The description of the lighting, heating and ventilation of these buildings, of their plumbing when connected with a sewerage system and of the ultimate disposal of the sewage necessarily loses much of the military tone as the principles and practice involved are the same in military as in civil communities. In a valuable chapter on military morbidity and mortality and another on the diseases of the soldier, the experiences of our own army during the years of peace preceding the Spanish-American war and during and since that outbreak furnish many of the illustrative statistics. An excellent article on disinfectants and their use follows the discussion of the infective diseases. Alcoholism, venereal diseases, insanity and suicide receive careful attention at the hands of the author who is, like most army officers, an ardent advocate of the recently suppressed canteen system. It is not possible, however, to do more than indicate the general scope and character of the work. Captain Munson's work has been well done and his Hygiene will no doubt be a standard for many years to come to all American students of military sanitation for the experiences and statistics of our own army, so largely cited in the work, will appeal to them with greater directness and emphasis than similar data derived from British or other foreign sources. The book has received the approval of Surgeon General Sternberg and has been adopted for use in the army.

HUMAN PLACENTATION.—An account of the changes in the Uterine Mucosa and in the Attached Fetal Structures during Pregnancy. By J. Clarence Webster, B.A., M.D. (Edin.), F.R.C.P.E., F.R.S.E., Professor of Obstetrics and Gynecology in Rush Medical College, etc., with 235 Illustrations. Cloth. Pp. 126. Chicago: Price, $3.75. W. S. Keener and Co. 1901.

This work is a comprehensive study of the human placenta, and is based upon investigations conducted by the author during eleven years in the College of Physicians, Edinburgh; McGill University, Montreal; and Rush Medical College, Chicago; It covers a study of the uterus during the second, third, fourth, fifth sixth, seventh, eighth and ninth months of pregnancy, in the first and second stages of labor, in the third stage—removed by Porro-Cesarean section—and during various stages of the puerperium. In addition he has studied a number of complete abortions in the early weeks, as well as the placenta and membranes in the late months of pregnancy. In order to investigate the mammalian relationships of the human placenta the uterus was examined in various stages of pregnancy, in the mouse, rat, rabbit, guinea-pig, pig, sheep and cow. The book is illustrated with more than two hundred figures, the great majority of which are reproduced from drawings and micro-photographs by the author. These illustrations demonstrate with accuracy the changes in the decidua and attached fetal structures throughout the greater part of gestation. The descriptive part of the work consists of 126 pages, including the bibliography. The press-work and the reproduction of the illustrations—almost wholly by the half-tone process—are quite satisfactory.

This work forms a most substantial contribution to the interesting department of embryology, with which it deals and in which there exist such great differences of opinion. It is believed that Professor Webster's interpretations of his results will go far toward the settlement of many of the disputed points, as for instance, that in regard to the origin of the syncytium, which is of special interest on account of its relations to the genesis of the so-called "Deciduoma malignum." There seems to be little doubt but that syncytium as well as the cells of Langhans' layer are of fetal epiblastic origin. The discussions of moot questions are all marked by a calmness and clearness creditable to the author's scientific spirit and learning. This is consequently an example of a kind of book which we have entirely too few in this country, namely the scientific monograph. As more extended scientific investigation is undertaken the need for this form of publication is sure to make itself felt. It would be an undoubted gain for scientific medicine in America if our medical book publishers could see their way clear to undertake the publication of monographs as has been done and is being done so satisfactorily in Germany and other countries.

Married.

E. E. PARKER, M.D., to Miss Dora Moss, both of Flora, Ind., April 30.

J. NUMA ROUSSEL, M.D., to Miss Amelie Dugué, both of New Orleans, April 30.

GEORGE E. SHAMBAUGH, M.D., Chicago, to Miss Edith Capps, of Jacksonville, Ill., May 1.

EDWARD A. BLOUNT, M.D., Nagadoches, Texas, to Miss Minnie Lewis, of New Orleans, April 23.

CHARLES LOUIS FINCKE, M.D., to Miss Mattie Ireson Brown, both of Brooklyn, N. Y., April 25.

FREDERICK N. C. GERAULD, M.D., Circle, Alaska, to Miss Huddleston, of Buffalo, N. Y., May 7.

HUGO A. ENGELHARDT, M.D., Houston, Texas, to Miss Elsie Tristram, of Brenham, Texas, May 1.

WILLIAM F. MALONE, M.D., to Miss Adelaide Peck, both of Milwaukee, Wis., at Chicago, April 30.

JOHN A. HARDY, M.D., Faeger, W. Va., to Miss Virginia T. Armistead, at Williamsburg, Va., April 24.

WILLIAM EDWARD ANDERSON, M.D., to Miss Pearl Horton Venable, both of Farmville, Va., April 30.

CORNELIUS ALLEN HARPER, M.D., to Miss Elizabeth Louise Bowman, both of Madison, Wis., April 22.

Deaths and Obituaries.

M. Albert Rhoades, M.D., Jefferson Medical College, Philadelphia, 1868, assistant demonstrator of anatomy, Jefferson Medical College; member and president for 11 years of the Reading Board of Health; for twenty-five years on the staff of St. Joseph's Hospital, Reading; sometime president of the Bucks County Medical Society and a member of the Board of Trustees and Judicial Council of the Medical Society of Pennsylvania, died at his home in Reading, where he had practiced for more than thirty years, May 4, after an illness of three years, aged 54 years.

Samuel Kuypers Lyon, M.D., College of Physicians and Surgeons, New York, 1868, while in a New York street, on his way to make a professional visit on May 4, was seized with a hemorrhage and expired soon after having been taken into a physician's office. He was for thirty years a surgeon of the

New York police department, and a fellow of the American Academy of Medicine. Besides being a member of the New York Academy of Medicine and the New York County Medical Association, he was identified with many other scientific bodies.

Harold **Snowden, M.D.,** died at his home in Alexandria, Va., from paralysis, May 4, aged 65. After graduation in medicine and a brief practice he began newspaper work in 1852 upon the Alexandria *Gazette*, of which he was editor at the time of his death. During the Civil War he served as surgeon in the Old Dominion Rifles and later in the 17th Virginia Infantry. Dr. Snowden also served several terms in the Virginia Legislature.

E. Stanley Perkins, M.D., University of Pennsylvania, Philadelphia, 1869, who had practiced for many years in Germantown, a member of the faculty of the Medico-Chirurgical College and an examining physician of the Philadelphia Pension Board, died at Germantown Hospital, May 6, after an operation for peritonitis, aged 56.

George C. Jarvis, M.D., New York University, 1860, Surgeon of the Seventh Connecticut Infantry throughout the Civil War, for many years a consulting physician of the Hartford Hospital, and a member of the AMERICAN MEDICAL ASSOCIATION, died from pneumonia at his home in Hartford, Conn., April 7, aged 67.

David H. Bartine, M.D., University of Pennsylvania, 1862, surgeon of the 114th Pennsylvania Volunteers in the Civil War, a prominent physician of New Jersey and president of the Board of Health of Merchantville, died at his home in that place, May 3, from heart disease, aged 59.

William W. Walker, M.D., Tulane University, New Orleans, 1871, one of the early settlers of Schulenburg, Texas, died at his home in that place, May 5, from subacute peritonitis. He was a member of the AMERICAN MEDICAL ASSOCIATION.

Ephraim Lewis Warren, M.D., Berkshire College, Pittsfield, Mass., 1848, who had practiced medicine for more than half a century in Massachusetts, a veteran of the Civil War, died at his home in Melrose, Mass., April 27, aged 78.

Abraham Deyo, M.D., College of Physicians and Surgeons, New York, 1851, and for many years a practitioner in Newburgh and Gardiner, died at his home in that town, May 4, after a long illness following la grippe, aged 71.

Francis P. Griffith, M.D., Willoughby University, Willoughby, Ohio, 1845, who had practiced in La Grange, Ind., for many years, and was health officer of La Grange County, died at his home in that place, April 29, aged 82.

Elwin Humphrey, M.D., Western Reserve University, Cleveland, Ohio, 1865, who had practiced for nearly forty years in Akron, Ohio, died from apoplexy at his home in that city, May 4, after an illness of two days, aged 72.

Julius Boushey, M.D., Medical College of Ohio, Cincinnati, 1874, for more than twenty-five years a practitioner of San Francisco, died at his home in that city April 29, after a protracted illness, from lung disease.

Marcellus A. Alexander, M.D., University of Louisville, 1870, was found dead in his house in Okeene, Okla., April 30, apparently from chloroform poisoning. He was about 70 years of age.

George Reid Dinsmoor, M.D., Bellevue Hospital Medical College, New York, 1865, died after a period of invalidism of twenty-three years, at his home in Keene, N. H., April 28, aged 59.

Orlando **Mitchell, M.D.,** Medical College of Indiana, Indianapolis, 1878, a prominent physician of Marshall, Ill., and a member of the board of pension examiners, died at his home, April 3.

John **Thruston, M.D.,** University of Louisville, 1855, the oldest native born practicing physician in Louisville, died in that city, May 2, after an illness of three years, aged 75.

Leonard H. Coe, M.D., University of California, San Francisco, 1896, of Fresno, Cal., died April 24, at Denver, Colo., where he had gone in the hope of bettering his health.

John **V. Martin, M.D.,** formerly a practitioner of Washington, Iowa, died in the State Hospital at Mount Pleasant, Iowa, May 2, after an illness of several months, aged 40.

William C. Harris, M.D., Central College of Physicians and Surgeons, Indianapolis, 1881, died suddenly from apoplexy at his home in Roachdale, Ind., May 1, aged 73.

Byron R. Evans, M.D., Starling Medical College, Columbus, Ohio, 1898, died at his home in Shawnee, Okla., April 28, from the results of a carbuncle on the neck, aged 33.

Frank M. Kirby, M.D., Columbus (Ohio) Medical College, 1882, of Rockford, Ohio, died at a private sanatorium in St. Louis, April 22, after a long illness.

Selton W. Stevens, M.D., Jefferson Medical College, Philadelphia, 1894, of Scranton, Pa., died April 25, a week after an operation for appendicitis, aged 39.

William Bovie, M.D., University of Michigan, Ann Arbor, 1858, died at his home in Augusta, Mich., from pneumonia, April 25, aged 73.

Frederic Wyland, M.D., Columbus (Ohio) Medical College, 1891, died at his home in Columbus, May 6, after a prolonged illness.

William D. Boozer, M.D., University of Nashville, 1874, died after an illness of ten years, at his home in Hogansville, Ga., April 25.

Felix G. Brown, M.D., Washington University, St. Louis, 1868, died suddenly at his home in Hutchinson, Kan., April 30, aged 57.

Tandy Allen, M.D., for the last ten years a resident of Kona, Hawaii, died suddenly at his home in that place, April 11, aged 44.

William M. Brunt, M.D., Kentucky School of Medicine, Louisville, 1891, died suddenly at his home in Eddyville, Iowa, April 24.

Francis T. McIntosh, M.D., Albany (N. Y.) Medical College, 1886, died at his home in Troy, N. Y., May 5.

Miles R. Biggar, M.D., Detroit (Mich.) Medical College, 1883, died at his home in Detroit, April 30.

Marion M. Pafford, M.D., Atlanta (Ga.) Medical College, 1895, died at his home, Cecil, Ga., May 6.

Societies.

COMING MEETINGS.

American Medical Association, St. Paul, Minn., June 4-7.
Medical Association of Missouri, Jefferson City, May 21-23, 1901.
Illinois State Medical Society, Peoria, May 21-23, 1901.
Medical Society of North Carolina, Durham, May 21-23, 1901.
Connecticut Medical Society, Hartford, May 22-23, 1901.
North Dakota Medical Society, Fargo, May 22-23, 1901.
Kentucky State Medical Society, Louisville, May 22-24, 1901.
Medical Society of West Virginia, Grafton, May 22-24, 1901.
American Laryngological, Rhinological and Otological Society, New York City, May 23-25, 1901.
American Laryngological Association, New Haven, Conn., May 27-29, 1901.
American Pediatric Society, Niagara Falls, N. Y., May 28, 1901.
American Gynecological Association, Chicago, May 28, 1901.
American Climatological Association, Niagara Falls, N. Y., May 30, 1901.
Association of Military Surgeons of the United States, St. Paul, May 30, 31, June 1, 1901.
American Academy of Medicine, St. Paul, Minn., June 1-3.
National Con. State Medical Examiners and Licensing Boards, St. Paul, Minn., June 3.
Association of American Medical Colleges, St. Paul, June 3.
American Medical Editors' Association, St. Paul, June 3.
Minnesota State Medical Society, St. Paul, June 3.
Indian Territory Medical Association, Vinita, June 4-5.
American Proctological Association, St. Paul, Minn., June 4-5.
American Dermatological Association, Chicago, June 4-6.
Rhode Island Medical Society, Providence, June 6.
International Association of Railway Surgeons, Milwaukee, June 10-12.
Medical Society of Delaware, Lewes, June 11.
Oregon State Medical Society, Portland, June 11-12.
American Medico-Psychological Association, Milwaukee, Wis., June 11-14.
Maine Medical Association, Portland, June 12-14.
Massachusetts Medical Society, Boston, June 12.
Colorado State Medical Society, Denver, June 18.
American Orthopedic Association, Niagara Falls, June 11-13.

Medical Society of New Jersey, Allenhurst, June 25-27.
Wisconsin State Medical Society, Waukesha, June 26.

American Climatological Association.—The Eighteenth annual meeting will be held at the Cataract House, Niagara Falls, N. Y., May 30, 31, and June 1, under the presidency of Dr. Robert H. Babcock, Chicago. The program will include the president's address and papers on:

"Puerto Rico: Its Climate and its Diseases," by Dr. Charles H. Alden, Assistant Surgeon-General, U. S. A., Ret'd.; "The Fevers of Florida," by Dr. Frank Fremont-Smith, Palm Beach, Fla.; "Climatology of Augusta, Ga.," by Dr. Thomas D. Coleman, Augusta; "Remarks on the Climatic Influences of Newport, R. I.," by Dr. W. C. Rives, Newport; "Nantucket and the Ocean Climate," by Dr. Harold Williams, Boston, Mass.; "Notes on the Climate of New York and New England," by Dr. Guy Hinsdale, Philadelphia, Pa.; "Some Observations on Southern California," by Dr. Samuel A. Fisk, Denver, Colo., and Dr. Norman Bridge, Los Angeles, Cal.; "Further Diagnostic Tests with Tuberculin," by Dr. Edward O. Otis, Boston, Mass.; "Two Cases of Aneurism of the Heart and one of Spontaneous Rupture of the Heart," by Dr. R. G. Curtin, Philadelphia, Pa.; "The Association of Tuberculosis and Syphilis," by Dr. F. I. Knight, Boston, Mass.; "A Case of Mechanical Obstruction of a Bronchus Simulating Rapid Phthisis," by Dr. J. B. Walker, Philadelphia, Pa.; "Piece of Meat in Bronchus—Disappearance by Absorption—Recovery," by Dr. Thomas W. Harvey, Orange, N. J.; "The Selection of Favorable Cases of Pulmonary Tuberculosis for Sanatorium Treatment," by Dr. E. R. Baldwin, Saranac Lake, N. Y.; "The Carrying out of the Hygienic Treatment of Pulmonary Tuberculosis Outside of Sanatoria," by Dr. Charles L. Minor, Asheville, N. C.; "Devitalized-air Toxæmia a Prime Cause of Tuberculosis," by Dr. Charles Denison, Denver, Colo.; "Cases in which the Tuberculin Test seemed Justified and Decisive," by Dr. W. E. Casselberry, Chicago; "The Home Treatment of Tuberculosis," by Dr. Leonard Weber, New York City; "The Home Treatment of Tuberculosis," by Dr. Irwin H. Hance, Lakewood, N. J.; "The Importance of Early and Radical Climatic Change in the Cure of Pulmonary Tuberculosis," by Dr. Charles Fox Gardiner, Colorado Springs, Colo.; "Clinical Aspects of Spa Treatment," by Dr. Beverley Robinson, New York City; "Analogous European and American Mineral Springs," by Dr. Guy Hinsdale, Philadelphia, Pa.; "The Relation of Sunshine to the Prevalence of Influenza," by Dr. Howard S. Anders, Philadelphia, Pa.; "A Case of Pulmonary Osteoarthropathy," by Dr. R. C. Newton, Montclair, N. J.; "The Physiological Influence of Climate on Nervous Diseases," by Dr. F. Savary Pearce, Philadelphia, Pa.; "The Use of Strychnia in Diseases of the Heart," by Dr. Abraham Jacobi, New York City; "The Cause of Death in Aneurysms of the Thoracic Aorta which do not Rupture," with report of two cases, by Dr. H. D. Arnold, Boston, Mass.; "The Etiology, Pathology, and Clinical Aspects of the Bovine Heart," by Dr. Leonard Weber, New York City; "The Hygienic and Mechanical Treatment of Heart Disease," by Dr. Boardman Reed, Philadelphia, Pa.; "A Case of Chronic Endocarditis," by Drs. Judson Daland and W. D. Robinson, Philadelphia, Pa.; "The Value of the Terms 'Cured,' 'Arrested,' and 'Improved' in Relation to Pulmonary Tuberculosis," by Dr. J. Edward Stubbert, Liberty, N. Y.; "The Increased Corpuscular Count of the Blood at High Altitudes, Especially on Rapid Ascent," by Dr. W. A. Campbell, Colorado Springs, Colo.; "The Influence of the Colorado Climate upon Pulmonary Hemorrhages," by Dr. Sherman G. Bonney, Denver, Colo.; "Proper Definitions of the Terms Following: 'Pretubercular or Prebacillary Stage,' 'Incipient Stage,' 'Moderately Advanced Stage,' 'Far Advanced Stage,' 'Improved Condition,' 'Arrested Condition,' and 'Cured or Apparently Cured Condition,' as Applied to Pulmonary Tuberculosis," by Dr. J. Edward Stubbert, Liberty, N. Y.; and "The Use of Guaialine in the Treatment of Pulmonary Tuberculosis," by Dr. W. W. Bulette, Pueblo, Colo.

Alumni Association of Creighton Medical College, Omaha, Neb.—The alumni, at their meeting, May 7, elected Dr. Edwin C. Henry, president; Dr. Rudolph Rix, secretary, both of Omaha, and Dr. Adda G. Wiley, South Omaha, treasurer.

American Laryngological, Rhinological and Otological Society.—The Seventh annual meeting of this Society will occur on May 23 to 25 in the New York Academy of Medicine, President Dr. Robert Cunningham Myles, New York City, in the chair.

American Orthopedic Association.—The fifteenth annual meeting of this association will be held at Niagara Falls, N. Y., June 11 to 13, under the presidency of Dr. Arthur J. Gillette, St. Paul, Minn. The sessions will be held in the parlors of the International Hotel.

Cape May County (N. J.) Medical Society.—At the annual meeting of this society on May 2 the following officers were elected: Dr. John S. Douglass, Tuckahoe, president; Dr. Joseph C. Marshall, Tuckahoe, vice-president; secretary, Dr. Nathan Cohen, Wildwood, secretary, and Dr. Randolph Marshall, Tuckahoe, treasurer.

Gulf Coast Medical Association.—The most important business transacted at the annual meeting of this Society at Pass Christian, Miss., May 1, was the unanimous adoption of a resolution strongly protesting against the abolition of Dry Tortugas as a marine quarantine station.

American Gynecological Society.—The twenty-sixth annual meeting of this Society will be held in the Fine Arts Building, Chicago, May 30 and 31 and June 1. Dr. Eli Van de Warker, Syracuse, N. Y., will preside, and Dr. Fernand Henrotin, Chicago, will deliver the address of welcome.

Denver Clinical Society.—This Society, which is composed entirely of women, gave its annual dinner, April 26, at which Dr. Mary Elizabeth Zakrzewska, Boston, the first woman to receive a medical diploma in the United States, was the guest of honor. Dr. Mary E. Bates acted as toastmaster.

Livingston County (Ill.) Medical Society.—This Society met for organization at Pontiac, April 27, and elected the following officers: Dr. James J. Pearson, Pontiac, president; Dr. Charles L. Hamilton, Dwight, vice-president, and Dr. John Ross, Pontiac, secretary and treasurer.

Alumni Association of the Detroit College of Medicine.—At the annual meeting of this body in Detroit, May 9, Dr. J. E. Davis, Detroit, was elected president; Dr. T. B. Scott, Vernon, vice-president; Dr. George C. Bassett, Detroit, financial secretary, and Dr. Charles T. Southworth Monroe, historian.

Clark County (Ohio) Medical Society.—The annual meeting of this Society was held in Springfield, May 2. The following officers were elected: Dr. Bennetta D. Titlow, president; Drs. Charles L. Minor and James A. Link, vice-presidents and Dr. William B. Patton, secretary and treasurer, all of Springfield.

Oklahoma Medical Association.—The ninth annual meeting of this Association was held in Oklahoma City, May 8, Dr. Charles W. Fisk, Kingfisher, presiding. Dr. Reuben D. Love, Perry, was elected president; Dr. John H. Scott, Shawnee, vice-president, and Dr. Eugene O. Barker, Guthrie, secretary and treasurer.

American Gastro-Enterological Association.—This Association held its fourth annual meeting in Washington, D.C., May 1, and elected Dr. John C. Hemmeter, Baltimore, president, Drs. William D. Booker, Baltimore, and Samuel J. Meltzer, New York City, vice-presidents and Dr. Charles D. Aaron, Detroit, Mich., secretary and treasurer.

Maryland Alumni of Baltimore Medical College.—The annual meeting and banquet of this Association took place at Baltimore, April 16. The following officers were elected: Dr. Edward L. Whitney, president; Dr. Gustav Goldman, vice-president; Dr. Thomas R. W. Wilson, secretary, and Dr. James C. Lumpkin, treasurer, all of Baltimore.

Alumni Association of University College of Medicine, Richmond, Va.—At the annual meeting of this Association, held in Richmond, May 2, Dr. Thomas M. Lippitt, U. S. Navy, was elected president; Dr. Charles R. Turner, Richmond, vice-president; Dr. Roshier W. Miller, Barton Heights, secretary and treasurer and Dr. Marvin E. Nuckols, Richmond, essayist.

Linton District (Mo.) Medical Society.—The twenty-ninth annual meeting of this Society was held in Mexico, May 7, when the following officers were elected: Dr. Arthur R. McComas, Sturgeon, president; Drs. R. Lee Alford, Vandalia, and Robert T. Gibbs, Hatton, vice-presidents; Dr. Edwin S. Cave, Mexico, secretary and Dr. Martin Yates, Fulton, treasurer.

Hudson County (N. J.) District Medical Society.—At the annual meeting of this Society, held in Jersey City, May 7, delegates to the State Medical Society and THE AMERICAN MEDICAL ASSOCIATION were appointed and the following officers elected: Dr. John C. Parsons, president; Dr. Henry H. Brinkerhoff, treasurer, and Dr. Charles H. Purdy, secretary, all of Jersey City.

District Medical Association of Central Illinois.—The twenty-seventh annual meeting of this Society was held in Pana, April 30, at which the following officers were elected: Dr. Thomas L. Catherwood, Shelbyville, president; Dr. Everett J. Brown, Decatur, and George W. Fringer, Pana, vice-presidents; Dr. John H. Miller, Pana, treasurer, and Dr. C. R. Spicer, Taylorville secretary.

Association of Military Surgeons of the United States.—This Association will meet in St. Paul, May 30, under the presidency of Dr. Alexander J. Stone, St. Paul. The Committee of Arrangements offers the following program of entertainment: Thursday evening, reception at the Aberdeen Hotel; Friday evening, annual dinner at the Aberdeen Hotel; Saturday afternoon, carriage drive to Fort Snelling; Saturday evening, theater party at Metropolitan Opera House.

Alumni Association of the College of Physicians and Surgeons, Baltimore, Md.—The annual meeting of this Association was held in Baltimore, April 27, at which the following officers were elected: Dr. William J. Todd, Mount Washington, president; Drs. William Gombel and T. S. Lowry, Baltimore, vice-presidents: Dr. Charles E. Brack, Jr., Baltimore, treasurer, Dr. Harry Knapp, secretary, and Dr. G. W. Roehrer, assistant secretary.

National Confederation of State Medical Examining and Licensing Boards.—This body will convene in St. Paul, June 3, and requests that every state or territorial board whose duty it is to examine or license physicians intending to practice in the jurisdiction of the board, by whatsoever name it may be called, affiliate with the National Confederation. The meeting will be presided over by the president, Dr. J. N. McCormack, Bowling Green, Ky.

Kansas State Medical Society.—The thirty-fifth annual meeting of this Society was held in Pittsburg, May 1, 2 and 3. Dr. Lewis H. Mann, Topeka, was elected president; Dr. James W. Ryan, Coffeyville, vice-president; Dr. William E. McVey, Topeka, recording secretary; Dr. James W. May, Kansas City, corresponding secretary and Dr. William E. Barker, Chanute, treasurer. The Society decided to establish and publish a medical journal in Topeka, and to meet for the 1902 session at Lawrence.

American Therapeutic Society.—The annual meeting of this Society was held in Washington, D.C., May 7 to 9. The following officers were elected: Dr. Reynold Webb Wilcox, New York City, president; Drs. Howard H. Barker, Washington; Thomas E. Satterthwaite, New York City; and Leon L. Solomon, Louisville, vice-presidents; Dr. Noble P. Barnes, Washington, secretary; Dr. William M. Sprigg, Washington, recorder, and Dr. John S. McLain, Washington, treasurer. The Society will meet in New York City, May 2, 1902.

Western Alumni Association of the University and Bellevue Hospital Medical College, New York.—The first banquet of this Association is to be given this evening at the Sherman House, Chicago. Among those on the program to respond to toasts are, Rt. Rev. Charles E. Cheney, Mayor Carter H. Harrison, Drs. James F. Todd, Willis O. Nance, Oscar A. King, Joseph M. Patton, and James G. Kiernan, Chicago; Dr. Charles S. Bond, Richmond, Ind., Dr. Charles C. Hunt, Dixon, Ill.; Dr. Fred R. Belknap, Niles, Mich.; Dr. Edward W. Jenks, Detroit, Mich.; and Dr. Edward T. Laughlin, Orleans, Ind.

Nebraska State Medical Society.—At the annual meeting of this body at Lincoln, May 7, 8 and 9, the Society put itself on record as opposing the legalizing of the practice of osteopathy, and appropriated $200 to test the constitutionality of the law passed by the legislature, which allowed osteopaths a standing. It adopted a resolution endorsing the proposed plan of reorganization as recommended by the Committee on Organization of the AMERICAN MEDICAL ASSOCIATION and instructed its delegates to assist in the movement. A committee on organization of the profession in Nebraska was also appointed. The following officers were elected: Dr. William B. Ely, Ainsworth, president; Dr. Allen B. Anderson, Pawnee City, vice-president; Dr. A. D. Wilkinson, Lincoln, recording secretary; Dr. H. Winnett Orr, Lincoln, corresponding secretary, and Dr. J. C. Greene, Lincoln, treasurer.

Ohio State Medical Society.—The annual meeting of this Society was held in Cincinnati, May 8, 9 and 10. Dr. Frank Billings, Chicago, and John A. Wyeth, New York City, delivered the addresses in medicine and surgery, respectively. The election of officers resulted as follows: Dr. Edmund C. Brush, Zanesville, president; Drs. E. Gustav Zinke, Cincinnati, Stephen S. Halderman, Portsmouth, James C. M. Floyd, Steubenville and William S. Phillip, Belle Center, vice-presidents; Dr. James A. Duncan, Toledo, treasurer, and Dr. P. Maxwell Foshay, Cleveland, secretary and editor.

American Association of Life Insurance Examining Surgeons.—This Association will hold its second annual convention in St. Paul, Minn., June 3, one day in advance of the meting of THE AMERICAN MEDICAL ASSOCIATION. The members of the Association who may happen to be in St. Paul one day in advance of the meeting of that body, are cordially invited to attend the meetings, which will be held in the rooms of the Ramsey County (St. Paul) Medical Society, Lowry Arcade, corner Fifth and St. Peter Streets.

American Medical Temperance Association.—The tenth annual meeting of this Association will be held, June 5, at St. Paul, Minn. The association now numbers nearly two hundred members, all of whom, with few exceptions, are members of THE AMERICAN MEDICAL ASSOCIATION. This association was organized in Washington in 1891, having for its special object the medical study of alcohol as a medicine and its value as a remedy in disease. Dr. N. S. Davis, of Chicago, has been president from the beginning. New studies of the effects of alcohol will be presented at the annual meeting by Dr. N. S. Davis, the president, Drs. Hall, Madden, Crothers, Stuver, Grosvenor, Webster, and others. The annual address will be delivered by Dr. Didama, the vice-president.

Mississippi Valley Medical Association.—It is announced that the dates of the next meeting of this association have been changed from September 10, 11 and 12, to September 12, 13 and 14, because the dates first selected conflict with another large association meeting at the same place. The meeting is to be held at the Hotel Victory, Put-in-Bay Island, Lake Erie, O., and the low rate of one cent a mile for the round trip will be in effect for the meeting. Tickets will be on sale as late as September 12, good returning without extension until September 15. By depositing tickets with the joint agent at Cleveland and paying 50 cents, the date can be extended until October 8. This will give members an opportunity of visiting the Pan-American Exposition at Buffalo, to which very low rates by rail and water will be in effect from Cleveland. Full information as to rates can be obtained by addressing the secretary, Dr. Henry E. Tuley, No. 111 West Kentucky Street, Louisville, Ky. Those desiring to read papers should notify the secretary at an early date.

Alumni Association of Albany Medical College.—At the twenty-eighth annual meeting of this Association the following officers were elected: Dr. Clarkson C. Schuyler, Plattsburgh, president; Drs. Israel S. Buckbee, Fonda, Daniel S. Cook, New York City, Nelson Everest, Gloversville and Robert B. Lamb, Dannemra, vice-presidents; Dr. Andrew MacFarlane, Albany, secretary; Dr. Robert Babcock, Albany, treasurer, and Dr. Harry S. Pearse, Albany, historian. Dr. Thomas D. Crothers, Hartford, Conn., retiring president, recommended the establishment of a college for the advanced study of medicine. "It is clearly evident," he said, "that a college of this character will be established here at a very early day, and every graduate will rejoice in it and warmly welcome such a school for exhaustive study and personal research into the higher problems of medicine." Dr. H. Judson Lipes, of Albany, was awarded $100 in gold, the Clarkson C. Schuyler prize, for the best essay written by a graduate of the college. Four essays were submitted on the subject "The Influence of the Discovery of Bacteria to Disease on the Practice of Medicine Exclusive of Surgery."

American Medical Editors' Association.—The annual business meeting of this Association will convene at the library rooms of the Ramsey County Medical Society, Lowry Arcade, St. Paul, June 3. This Association, as implied in the name, consists of medical editors of the United States. Meetings are held annually, coincident with THE AMERICAN MEDICAL ASSOCIATION. The aims of this Association are the advancement of medical journalism, the foundation of an ethical press in medicine, and the improvement of the medical profession in general. A partial list of papers to be read includes the president's address, Dr. Alexander J. Stone, St. Paul, Minn.; "Relative Value of Medical Advertising," Dr. John Punton, Kansas City, Mo.; "Improvements in Medical Education," Dr. Dudley S. Reynolds, Louisville, Ky.; "Some Thoughts on the Ethics of Medical Journalism," Dr. Burnside Foster, St. Paul, Minn.; "Editorial Corps and Medical Journalism," Dr. George F. Butler, Alma, Mich.; "Relation of the Medical Editor to Original Articles," Dr. Harold N. Moyer, Chicago; and papers, subjects unannounced, by Drs. John V. Shoemaker, Philadelphia, and George H. Simmons, Chicago.

ASSOCIATION OF AMERICAN PHYSICIANS.

Sixteenth Annual Meeting, held in Washington, D. C., April 30, and May 1 and 2.

(Concluded from p. 1340.)

Uncomplicated Hemorrhage from the Pyothorax.

DR. A. JACOBI, New York City, reported the case of M. C., 7 years old, who had been ill for about a month previous to admission to the hospital, complaining of a languid feeling, slight fever, lack of appetite, occasional cough and some pain the right lung and down to the fourth or fifth rib, with flatness over the base. Puncture yielded pus. The next day resection was in the right side of the chest. There was marked dulness over

done and 500 c.c. of inoffensive pus flowed out unmixed with blood. Thiersch's solution was used for injection, and it returned with a little bloody pus when all of a sudden it was followed by the flow of a large quantity of pure blood. The cavity was irrigated and then it could be seen that the blood was oozing from disseminated tufts over the pulmonary pleura; some of these tufts were small, some quite large. The cavity was packed with gauze and when it was removed two days later there was another slight hemorrhage, after which granulation went on in the usual way. Search for malignant tumor was negative and there was no suspicion of tuberculosis. Dr. Jacobi said the case was unique in his experience and furnished an additional cause for hemorrhage into the pleural cavity. A search of the literature had brought out no further information on the subject, no similar cases, and his surgeon friends had seen nothing of the kind.

A Case of Pneumonia Complicated by Pseudomembranous Exudate on the Mucous Membranes of the Mouth, Tongue, Pharynx, Nares, Conjunctivae, Glans Penis, Anus, Etc., Caused by Diplococcus Pneumoniae.

DR. CHARLES CARY, Buffalo, N. Y., reported this case, remarkable in the occurrence during the course of an attack of acute lobar pneumonia in a boy of 11 years, of a profuse pseudomembranous exudate upon nearly all mucous surfaces of the body open to inspection. There was also evidence of extensive passive pleuritis and probably the involvment of the gastro-intestinal tract throughout its entire length. The affection terminated in recovery by lysis. The pneumococcus was obtained in pure culture from the heart's blood, the organs and the exudate.

Notes on the Relapsing Fever of Hodgkin's Disease.

DR. J. H. MUSSER, Philadelphia, reviewed the literature and called attention to the paper of Ebstein on chronic recurring fever, and to the article in Nothnagel's System, on the same subject. Dr. Musser reported two cases, the characteristics of which were attacks of fever lasting from eight to twelve days, and alternating with periods of apyrexia. In both there was increase of the glandular swellings coincident with the fever which would rise rapidly to a great height, 105 or 106 F., and after ten days terminate by crisis. In the second case cultures and inoculations failed to disclose the nature of the disease, but the patient now has pulmonary tuberculosis. Dr. Musser concludes that this form of fever is in all probability an expression of the glandular form of tuberculosis to which Hodgkin's disease probably belongs.

The Acid Intoxication of Diabetes and its Relation to Prognosis.

DR. C. A. HERTER, New York City, spoke of the method of opposing the acids and bases as the best means of detecting the amount of acid in the urine. As a clinical help, the detection of the nitrogen of ammonia was of much value, but not absolutely reliable. He found that with the increase of organic acids, measured as oxybutyric acid, coma was imminent. Crotomic acid was always present and there was an increase for days, weeks or even months before the onset of coma. Coma develops if large amounts of oxybutyric acid persist, say quantities greater than 25 grams a day. When the urine contains little or no trace of organic acids, there is little prospect of coma, though other troubles may present themselves.

Metabolism in Diabetic Coma, with Special Reference to Acid Intoxication.

DR. E. P. JOSLIN, Boston, Mass., reported a case of fatal diabetic coma, and gave a detailed account of the chemical analysis of the urine from day to day, with special reference to the varying amount of organic acids.

A Study of Bubonic Plague Based on the Outbreak in San Francisco.

DRS. L. F. BARKER, Chicago, F. G. NOVY, Ann Arbor, Mich., and SIMON FLEXNER, Philadelphia, presented this report:

Dr. Barker opened the discussion with a consideration of the clinical aspects of plague, stating that it belongs to the group of septicemic infections or diseases in which the causative agent can in very susceptible individuals produce a general sepsis without local lesion, but which in more resistant individuals gives rise to a disease characterized by local reaction without general sepsis. The character of the epidemic in San Francisco was like that which has prevailed during the early stages of all other epidemics. Thirty-one cases were definitely proven to be plague, and twenty-eight of these occurred among the Chinese. The ordinary cases of plague begin suddenly, usually with a chill, with fever that increases rapidly but has a curve characterized by intermissions and irregularities; the patient is nauseated, severe nervous symptoms follow and generally within twenty-four hours the bubo appears. The course of the disease is a continuous and progressive failure until death occurs, being the fourth and sixth days. The bubo develops differently from that accompanying venereal affections. The size varies, being sometimes as large as one's fist and occasionally so small that it can not be discovered by inspection or palpation. Buboes are most frequent in the groin, next in the neck and then in the axilla. The two principal types of plague are the bubonic and pneumonic forms, and a primary skin plague can probably be distinguished with a local lesion in the form of a carbuncle. In addition to these there is the plague septicemia, which may be divided into primary and secondary forms clinically. By the first is meant a septicemia produced by the entrance of the bacillus into the blood without the development of a bubo. In the secondary form there is a flooding of the blood by the plague bacillus, causing early death. In the early days of an epidemic and again toward its close there are usually found a number of mild cases, the patients not being sick enough to prevent their walking about. Such individuals are a source of great danger unless they can be isolated, for it has been proven that the urine and feces frequently contain the plague bacillus for as long as four or six weeks after apparent recovery. The pneumonic form of plague is characterized by a very bloody sputum containing immense numbers of the bacilli.

Dr. Barker referred to the great importance of recognizing the first case of plague, and said that no disease is easier of diagnosis if one can take the proper steps. This should consist in a bacteriologic examination of the sputum, the blood, the splenic juices and the bubo contents when present. Serum diagnosis is unreliable, except to show whether or not an individual has had the plague. He insists on the importance of regarding every case of fever occurring in a place where plague is suspected as being a case of plague until it is proven to be something else, and furthermore the importance of believing at such times that every cadaver is one of plague until it has been bacteriologically examined. As to treatment, he said that if he should contract the disease himself he would promptly use the serum.

Dr. Novy considered the bacteriology of bubonic plague, reporting in detail the work done by the Commission in San Francisco to prove the nature of the disease seen there.

Dr. Flexner considered the pathology of this affection. He said that the glandular enlargements can not be mistaken for those occurring in any other disease. The bubonic condition is characterized by a peculiar hemorrhagic edema which is not limited to the gland, but involves its surrounding tissues for some distance and shows numerous foci of necrosis. The enlargement is due to multiplication of the cells normally present in the gland, in addition to the edema, and to the enormous growth of bacteria which is greater than in any other disease with the possible exception of the skin lesions of leprosy. The necrosis is due to the presence of toxins and bacilli in the blood-vessels. The pneumonia is usually lobular in character and the exudate contains enormous numbers of the bacilli making up a very considerable part of the material which fills the alveoli and produces the consolidation. The changes in the spleen are those of acute splenic fever and the organ is enlarged ocasionally to five times its normal size.

Dr. Flexner said that he expects to hear soon that plague has disasppeared from San Francisco and that the statement when received will be reliable in that it will be based on bacteriologic demonstration, for the city and state authorities acting with the United States Government have carried out the recommendations of the Commission for the erection of a

public mortuary and for the establishment of a retention camp in which suspected cases will be kept under observation.

Experimental Yellow Fever.

DRS. WALTER REED and JAMES CARROLL, U. S. A., presented this report, Dr. Reed giving a detailed account of his recent work in yellow fever (THE JOURNAL, February 16), adding the histories of a number of cases not heretofore recorded. As in the first instances, however, they show very definitely that the poison of yellow fever is carried in the circulation and can be transmitted from one person to another by mosquito inoculations or by direct transmission of the blood hypodermically.

DR. GEO. M. STERNBERG, Washington, D. C., referred to the importance of these demonstrations, which have made clear a number of facts that have heretofore seemed contradictory. For instance, ships arriving from Havana without any cases of yellow fever aboard would be unloaded by stevedores, a number of whom would soon develop the fever. It is now clear how they succeeded in disinfecting such ships by sulphur dioxid. The burning sulphur destroyed mosquitoes hanging about on the ships, whereas it could not have produced disinfection if it were necessary to penetrate the cargo. This work also explains how yellow fever was contracted from passing ships with which no communication had been held. Dr. Sternberg referred to his own work in the effort to determine whether there is anything in the blood of yellow fever patients that would give the disease to others, and said that now that the intermediate host had been discovered he hopes it will not be long before the parasite itself is isolated.

A Case of Malarial Nephritis with Massing of the Parasites in the Kidney.

DR. JAMES EWING, New York City, in his paper pointed out that microscopic examination of the kidneys of fatal cases of malaria yield evidence of three main types of acute renal lesions occurring in this disease: 1. Acute degeneration of toxic origin, often reaching a degree in which exudation of blood serum into the tubules is added, is responsible for the vast majority of the cases of albuminuria in malaria. 2. An extreme form of acute degeneration with focal necroses which is seen in cases of hemoglobinuric malarial fever. 3. Massing of parasites in the renal capillaries with extreme degeneration of parenchymatous cells, hemorrhages and exudation into the tubules. This is seen only in severe estivo-autumnal infections.

Septic Infection Through the Stomach and Duodenum.

DR. WALTER B. JAMES, New York City, said that it is generally assumed that septic poisoning rarely takes place through lesions of the stomach and duodenum. Influences that operate against such are the inhibiting effect of the gastric contents on bacterial growth and the effective protective mechanism supposed to reside in the liver and to operate on such elements as find their way into the portal stream. The author was led to inquire into the subject through the occurrence in his practice of several cases in which the clinical picture, and in some instances the results of the postmortem, pointed to the existence of septicemia where it seemed probable that the portal entry for infecting organisms had been lesions of the stomach or duodenum. Dr. James reviewed the recent work to show that the evidence proves that the stomach and duonenum practically at all times contain large numbers of bacteria that are taken with the food and are in an active state capable of exerting their peculiar influences and producing a septic condition should a solution of continuity take place in the mucous membrane. Illustrative cases were given to show that severe and even fatal septicemia may have its starting-point in an ulcer or similar erosion in the mucous membrane of the stomach.

Two Cases of Streptothrical Infection; One Bronchopneumonia, the Second Abscess of the Brain.

DRS. J. H. MUSSER and N. B. GWYN, Philadelphia, presented this paper. The first case was one of bronchitis of several weeks' duration, due to a mixed infection and terminating in bronchopneumonia, the sputum showing micro-organisms having the characteristics of streptothrix and also of the branching forms of tubercle bacilli. Inoculations and cultures did not show them to be tubercle bacilli. The second case was that of a young man in whom the clinical features of tuberculous tumor of the brain and meningitis were present. There were no localizing symptoms. The patient had epileptic convulsions, and, after an illness of one week, died in coma. The spinal fluid was negative. At the autopsy a small abscess was found in the frontal lobe, which contained foul pus in smears of which the streptothrix was found.

Report on a Chemical Study of the Tubercle Bacillus.

DR. E. L. TRUDEAU, Saranac Lake, N. Y., presented this report. An assistant of his recently started a chemical analysis of the tubercle bacillus and obtained some very interesting results. He found the organism to be composed of about 30 per cent. of wax, which is undoubtedly the part which takes up the stains. The outside coating consists of cellulois, and he also found three proteids from which he separated a nucleic acid. A coloring matter of light pink shade was obtained and he was inclined to believe that the products of the nuclear proteid are the active portions of the organism. A glycogen was also isolated from the bacillus.

To What Extent is Urine a Suitable Solid for Bacterial Growth.

DR. WM. A. PARK, New York City, said that as the result of numerous tests it was found that the best growths occur in the neutral or slightly acid urines, but still there are certain urines that, without regard to the reaction, will not permit the growth of any bacteria. An effort was made to determine the amount of acid or alkali production by the bacteria. The colon bacillus made some alkali in albuminous urines. The staphylococci made more in diabetic urines, but the proteus made by far the most, changing some decidedly acid urines in a few hours into alkaline solutions. The practical bearing of this seemed to be that treatment might be aided in certain infections by keeping the urine decidedly acid.

Orchitis Complicating Fever.

DR. F. P. KINNICUTT, New York City, said that Osler observed this complication in only two of his first 800 cases of typhoid. Dr. Kinnicutt reported two cases occurring in 889 typhoid cases at the Presbyterian Hospital. Of the cases collected by Eshner, 35 occurred during the period of convalescence, and of these 13 went on to suppuration. Six presented, on examination, the Ebert bacillus, and only one the presence of any other pyogenic organism. Dr. Kinnicutt concludes that it is a rare complication of typhoidal origin which develops late in the disease or during convalescence, and terminates usually by resolution. Suppuration occurs in 25 per cent. of all cases. Atrophy of the testicle is a rare sequence and death has not been noted.

Notes on the Treatment of Some Forms of Cancer by the X-Rays.

DR. F. H. WILLIAMS, Boston, stated that the risk of producing burns is greater when using the x-rays for therapeutic than for photographic purposes, and their caustic action should be carefully guarded against. The cases he reported have all been examined by pathologists first to determine their cancerous nature. They consisted of epithelioma of the lid and hand and rodent ulcers. The cosmetic results were excellent. The treatment sometimes only requires a few exposurs, and it can be conducted without the patient leaving off his usual occupation. The difficulties are that the apparatus is expensive and the treatment sometimes prolonged. In reply to questions from Drs. Bond and Peabody, Dr. Williams said he believed it was the *x*-rays and not the cathode rays which possess therapeutic value, and that the interposition of a cloth or any penetrable substance between the patient and the tube has no difference in the action of the rays.

Osteitis Deformans.

DRS. F. A. PACKARD and J. D. STEELE, Philadelphia, presented this topic. Dr. Packard analyzed the 67 cases from the literature, showing the preponderance of this affection among males and its greater frequency in old age, together with the comparative infrequency of association with malignant tumors as contrasted with the usual text-book statements. He reported a case with the characteristic changes described by Padgett.

The Spinal Form of Arthritis Deformans.

DR. WM. OSLER, Baltimore, Md., thinks we should recognize clinically three different grades of this disease: 1, the form occurring in young children, characterized by enlargement of the spleen and lymph glands; 2, the form in adults, chaacterized by atrophic changes; 3, the more characteristic form with the well-recognized changes of the disease. Sometimes all the joints of the body are involved and sometimes only a certain set of joints. He referred to one case in his care where only the feet and hands were involved. Dr. Osler gave particular consideration to the form in which the spinal column is chiefly involved, and which has raised the question whether some of these cases are not due to diseases of the nervous system. He does not believe they are separate and distinct diseases, but looks on them as a variety of arthritis deformans differing only from the other types in involvement of the spine itself, some ligamentous tissue and the posterior spinal nerve roots.

Certain Trophoneuroses and their Relation to Vascular Disease of the Extremities.

DR. B. SACHS, New York City, reviewed a special group of trophoneuroses heretofore generally believed to be due to changes in the nervous system, but in which careful examination of some cases had shown the trouble to have arisen in disease of the vessels rather than the nerves.

Personal Experiences in Cases of Jacksonian Epilepsy, with Special Reference to the Question of Treatment by Operation.

DR. J. J. PUTNAM, Boston, Mass., considers this form of epilepsy to be the only one that warrants surgical intervention, and he advises it although neurologists are more conservative on that point now than a few years ago. A focal lesion is not always found, but even in such cases operation frequently does good, perhaps through production of an inhibitory effect and the breaking of a vicious circle.

The Heredity of Appendicitis.

DR. F. FORCHHEIMER, Cincinnati, Ohio, reviewed at length the history of several families that exhibited genealogic charts to show the number of cases occurring in certain families and their evident inheritance.

The Importance of a Recognition of the Significance of Early Tuberculosis in its Relation to Treatment.

DR. E. L. TRUDEAU, Saranac Lake, N. Y., reviewed the history of his work at the sanitarium and the work of others to show that tuberculosis placed under treatment in its incipiency will give about 75 per cent. of cures, whereas if these same patients are allowed to waste their opportunities for treatment until the disease is well advanced, a fatal outcome or a prolonged illness is almost certain. He laid particular stress on carefully investigating every case that shows a persistent, though irregular, afternoon rise of temperature of .5 degree or more. His experience has shown that the vast majority of patients seeking entrance to sanatoria apply too late to secure the best results, and he urges physicians in general to investigate their suspicious cases more closely, and to inform such patients of the nature of their disease so that they may secure proper treatment.

A Study of a Series of Cases of Burns.

DRS. J. G. ADAMI and J. MCCRAE, Montreal, presented this report on experimental work that agreed in every particular save one with that published by Bardeen, of the Johns Hopkins Hospital several years ago. The authors did not find focal necrosis with the same regularity that Bardeen did, but the lesions were in all other respects similar to those of toxin infections.

Election of Officers.

The following officers were chosen: Dr. J. C. Wilson, Philadelphia, president: Dr. James Stewart, Montreal, vice-president; Drs. S. Solis-Cohen, Philadelphia, recorder; Dr. Henry Hunn, Albany, N. Y., secretary; Dr. J. P. Crozer Griffith, Philadelphia, treasurer; Drs. Frank Billings, Chicago, F. P. Kinnicutt, New York City, councillors; Dr. Wm. Osler, Baltimore, Md., member of the executive council of congress, and Dr. F. H. Williams, Boston, his alternate.

CALIFORNIA ACADEMY OF MEDICINE.

Meeting, April 30, 1901.

The president, Dr. D. W. Montgomery, in the chair.

Sacral Teratoma.

DR. JAMES F. MCCONE presented a case, as follows: The fetus was one of twins. Its parents were not consanguineously related, and neither had suffered from infective fevers. The tumor grew from the post-anal region, and was in no way intimately connected with alimentary canal, or with sacrum of coccyx. The tumor was a flattened spheroidal mass 10 cm. in diameter, 6 cm. in thickness. It presented microscopically many varieties of tissue, areolar, myxomatous, glandular, nervous, muscular, etc. One part of the tumor had the general structure of small intestine, with its mucous membrane, villi, lymphoid follicles, and muscularis mucosa.

DR. C. A. VON HOFFMANN also exhibited a teratoma arising from the superior and inferior maxillæ, tissues of the neck, and sternum. Its largest circumference was 12 inches, and its circumference at its root was 11 inches. The mother was a strong woman 29 years of age, who had had a normal confinement in 1887. The monstrosity presented was born in December, 1900. It interfered somewhat with the passage of the head through the pelvis, which required the assistance of forceps. The placenta was small and normal, and the puerperium normal. He examined her on January 30, and found involution complete.

DR. D. W. MONTGOMERY said that he had seen a very interesting case of teratoma some years ago in the practice of Dr. McNutt, which differed from those usually seen in being malignant. It was situated on the abdomen, and caused the death of its host. They frequently appear at the sacral and occipital regions, which he thought were their most frequent location. They have to do with the embryonic layers, and contain enormous numbers of tissues. Some look like separate beings glued to the fetus born.

DR. MCCONE protested against the name of sacral being given to these tumors, for they are in no way connected with the sacrum. It was the region where they appeared, and not the tissue of which they were formed, which had given them this name.

DR. H. BRUNN said that teratomas of the sacral region were more common than the one exhibited to-night by Dr. von Hoffmann, those having the location of the latter specimen, being quite rare. Sacral teratoma did not arise from the sacrum, but from the post-anal region. This one had no connection with the sacrum or the coccyx.

Subphrenic Abscess.

DR. T. W. HUNTINGTON reported a case as follows: "On April 17, 1901, the patient, A. M. F., was admitted to the Medical Service at the City and County Hospital, and the following history was recorded. A male, born in Illinois, age 54, occupation canvasser. Father died of tubercular disease. Family history otherwise unimportant. Uses alcohol and tobacco moderately. Previous history insignificant. Five days prior to admission was seized with violent cramps in upper abdominal region, attended by nausea. Hypogastric pain continued, and was present at first examination. There was persistent hiccough for first two days, which ceased spontaneously. Bowels constipated, suggesting partial obstruction. Pain gradually increased. Heart seemed slightly displaced to the left. Slight dulness at left apex. Excursion of diaphragm not made out. Liver dulness could not be outlined. Spleen somewhat enlarged. Urinary examination negative. Leucocytes 6400.

The patient was transferred to my service April 23, 1901, without definite diagnosis. On examination the entire abdomen was found to be distended, tympanitic, and acutely sensitive. Patient seemed to be in great pain, but painful area had no definite limits. The distension over the region of the gall-bladder was markedly greater than at any other point amounting to a positive elevation of the abdominal wall at that point. Over this area there was tympanitic resonance which extended laterally to the axillary line. From this point posteriorly there was dulness. The temperature had ranged from 99 to 100. Pulse full, rapid and rebounding. Leucocyte count

14,400. Exploration was advised. The patient consenting, chloroform was administered and a vertical incision was made on the outer side of the right rectus, below the costal margin. On opening the peritoneum there was an escape of a considerable amount of gas. This was followed by an outpouring of nearly three quarts of foul-smelling rather thin pus. The abscess cavity was irregularly defined, and its limits could not be definitely determined, except by the examining finger. After extensive irrigation which was repeated many times it was found that the pus cavity was bounded below by the transverse colon. The entire outer surface of the liver was bathed in pus and a large amount escaped from the interspace between the stomach and liver. The diaphragm was forced upward to the level of the fourth rib, and externally against the chest wall. Thinking that there must be communication with the pleural cavity, a small portion of the eighth rib was resected in the axillary line, but at once found the diaphragm lying against the chest wall, and apparently acting as a barrier. This wound was accordingly closed. The abscess cavity was then drained. the original wound partly closed, and frequent irrigation of the cavity ordered. Patient rallied fairly well. Since the operation the temperature has ranged from 102 to 104. There has been a free discharge of pus. The patient has taken nourishment and stimulants freely. The diagnosis in this case was never made with any definiteness until an exploratory incision made a demonstration possible. The presence of gas overlying the pus reservoir and crowding outward the containing wall, was a marked feature. Probably a more careful examination of the patient in different postures would have suggested the presence of pus in large quantities, but the patient's condition was such as not to warrant prolonged examination. The origin of the abscess is still a matter of some doubt. From the first suspicions were centered upon the gall bladder, although the patient's history in no definite manner warranted this hypothesis. Careful search was made during the operation for the gall bladder, but it could not be made out. The sudden onset of the original attack furnishes some grounds for assumption of the presence of a perforating ulcer of the stomach, pylorus or duodenum. Subphrenic abscesses, or collections of pus within the lesser peritoneal enclosure may originate variously. They may be primary, that is have their origin in lesions of the stomach, pylorus, duodenum, transverse colon, liver, gall bladder, lungs, pleura, or pericardium. Keen reports one case as probably originating in the spleen as a sequel of typhoid fever. Osler and Lampe state that suppurative appendicitis is a frequent primary cause. Secondarily this condition may result from septic foci in the liver, which are metastatic manifestations following infective processes in remote organs. It seems probable that septic venous thromboses may occur in this locality outside of the liver, but this statement lacks confirmation on the part of observers. In one of my own cases a subphrenic abscess occurred seven days after the evacuation of an appendicular abscess. Surgical interference resulted in marked improvement temporarily, but the patient finally succumbed to a similar pulmonary involvement.

DR. J. H. BARBAT said that this case was of peculiar interest to him. The gas having a fecal odor might suggest the probability of the abscess being an appendicular one. Several years ago he had had subphrenic abscess in his own person which had been incised and drained, and enormous quantities of pus removed. It had finally healed over, but some years subsequently, he had had a well marked attack of appendicitis. His abdomen was opened, and a much thickened and firmly adherent appendix situated behind the cecum, was removed. These adhesions were very dense, showing they had existed for a long time. It was his opinion that his previous abscess originated in the appendix.

DR. H. M. SHERMAN said that he had seen an item within the last six or eight weeks in some journal, that subphrenic abscesses never follow appendicitis. He was able to refute that statement, however, as he had just lost such a case. He thought the presence of gas in Dr. Huntington's case would suggest a perforation of the duodenum or stomach.

DR. PHILIP KING BROWN said that he had autopsied two cases, one was a subdiaphragmatic and pleural abscess, following appendicitis, and subsequently discharging through the mouth. The other case had followed more directly Dr. Huntington's report. It was a case of duodenal ulcer.

DR. HUNTINGTON, in closing, said there was no history of appendicular involvement; he had eliminated that. He had two theories to present as a cause, the first that it was a ruptured gall bladder, and the second, a perforation of the duodenum.

Acute Nephritis with Syphilis.

DR. D. W. MONTGOMERY exhibited a patient who had had an acute nephritis in the early stage of syphilis. The patient was an Irishman 49 years of age, and presented himself at the clinic with a very much indurated chancre on the belly in the median line, and just above the pubic hair, with immense swellings of the lymphatic nodules in both groins. A few papules, some papulo-squamous lesions, and a fading roseola of the skin. There were mucous patches in the mouth, he was drowsy, had headache, and a coated tongue. About the fifty-second day from the first appearance of the chancre he presented himself with marked edema of lower limbs, scrotum, and lower conjunctival folds. Urine was acid, specific gravity 1022, and large amount of albumen (one gram to the liter). Microscopic examination showed uric acid and oxalate of lime crystals, some pus corpuscles, hyaline, and granular casts. The patient had not been exposed to cold, nor was he a drinking man. He had not had scarlet fever, nor diphtheria, nor pneumonia, and his heart and blood-vessels were normal. He had never had gonorrhea, nor any other trouble with his urinary organs previous to the nephritis attack. He was sent to the Hospital where he remained about ten weeks, iodid of potash being continued in fairly large doses and on leaving, the urine was perfectly free from albumin and casts, nor have any ever been found since. He had been under treatment for syphilis at the clinic, at intervals, until the present time. This was an instance of acute nephritis occurring at an early stage of syphilis, and as he was not taking mercury at the time of the nephritic attack, and as he had since taken mercury without nephritis developing, it was clear that it was not mercurial nephritis. Other causes, such as exposure to cold, rheumatism, and gout, being eliminated, the author was reduced to accept syphilis as the etiologic factor.

X-Ray Burns.

DR. MONTGOMERY also exhibited a patient who came to him in March, 1901, suffering from a large X-ray burn on the belly, received the previous November, after an exposure of three sittings before a static machine. There was an irregular shallow ulcer with inflamed borders and covered with a yellow leathery, tightly adherent coating, which was very painful and tender. The patient said it had healed over a very considerable portion of its original area, but lately it had come to a standstill. Various ointments and lotions had been used, and finally a 10 per cent solution of lysol, which was found to be best for the control of the pain.

DENVER AND ARAPAHOE MEDICAL SOCIETY.

Regular Meeting.

Dr. H. G. Wetherill in the chair.

A Year's Experience with Cataract Extraction.

DR. EDWARD JACKSON reported, in detail, seven cases of cataract extraction, and made the following conclusions: All the cases may be classed as senile cataract, although two of the patients were under 50. In extracting nontraumatic cataract in young persons he has found the lens so soft that it could have been expelled through a much smaller incision. Three of the cases presented mature cataracts, one even somewhat hypermature. In three cases immature cataracts were extracted, in two vision was restored promptly, and in one not until a secondary operation had been done. His experience with ripening operation has been favorable without exception. But even if this were the universal experience, which it is not, he thinks it very doubtful whether the ripening operation would be worth doing in any considerable class of cases. The slight gain in the ease of extraction and brilliancy of

immediate result scarcely compensates for the additional period of waiting before the chief operation can be done. The extraction of immature cataract and its advantages apply only where vision has been greatly impaired or lost in the other eye. If in the other eye vision is normal or as good as the cataract extraction is likely to give, there is little reason for doing the operation before the cataract reaches maturity. The chief positive gain from extraction of monocular senile cataract is from the increased field of vision, and in this way the patient is saved from the dangers of accident that attend one who is blind in one eye. Besides, such cases will avoid the risks of hypermature cataract and of temporary blindness should the other eye become involved. He regards a hypermature cataract as a serious complication—the capsule becomes thickened, thus increasing the difficulty of extraction and rendering a secondary operation necessary and more difficult. In relatively young persons the cataract is quite white, making a very noticeable deformity. He uses a simple dressing which consists of a small loose mass of absorbent cotton held in place by one or more strips of adhesive plaster extending from the brow to the cheek. He has never seen any bandage that would retain the dressing with the same accuracy, with as little possibility of making pressure upon the eye, and as little chance of displacement or disturbance by turning the head on the pillow. Expulsive intraocular hemorrhage following lens extraction is a rare but utterly disastrous accident. In cases that seem to be in special danger of such hemorrhage he operates with the patient sitting up, and has kept them sitting up for several hours afterward. A secondary operation was done in but three of the seven cases. Cataract extraction has been less affected by the evolution of antisepsis than any other important surgical operation. We must disclaim the possibility of making the operation absolutely aseptic, and yet is there any other surgical measure that can show a better record as regards infection? His experience with the operation seems to teach the lesson that the line is yet to be drawn between essentials and non-essentials in the technique of aseptic surgery.

DR. G. M. BLACK said that instead of the adhesive plaster he uses isinglass plaster. He removes the dressing on the second day, relying on Nature to effect the cure.

DR. JOHN CHASE is averse to the use of adhesive plaster, because he has seen several patients remove the bandage. He prefers to operate on cataract cases at the home of the patient.

Important Sequelae Resulting from Delayed Operation in Appendicitis.

DR. A. S. LOBINGIER said that much has been written in a disconnected way concerning one or more of the various sequelae which may arise from appendiceal infection, but a broad and comprehensive treatment of the subject has yet to be written. The following sequelæ are on record; lymphangitis; lymphadenitis, especially of the mesenteric and retroperitoneal glands; venous thrombosis involving right or left iliac or portal veins; Douglas's, tubo-ovarian, psoas, lumbar, perinephric, and subphrenic abscesses; septic hepatitis, cholangitis, and ulcer of the stomach with hematemesis; intrathoracic abscess; septic pneumonia; fecal fistula; intestinal adhesions, bands and obstruction; urethral obstruction and post-operative hemorrhage.

DRS. WARREN, HALL, GRANT and PERKINS each reported cases of formation of abscesses in various organs following appendicitis, and expressed themselves unqualifiedly in favor of early operative interference.

DR. JOHN S. MILLER said that surgeons may be divided with reference to appendicitis into a group of three: Those who would operate early, possibly before pus formation has taken place, those who wait for Nature's efforts to wall off the general peritoneal cavity, and the class who endeavor to tide the patient over the critical period and do an intermediate operation, viz., between attacks, when there is least inflammatory condition present. The two latter classes are faulty, in that theirs are the very methods which invite sequelæ. He recalled a case in Professor Shuchard's clinic at Heidelberg, ten years ago, in which the abscess was simply opened and drained. The first sequel manifested itself a month later in the shape of a subphrenic abscess; the second sequel a few weeks later in the form of a serous pleuritic effusion, in which streptococci could be traced.

MEDICAL SOCIETY OF RUSH MEDICAL COLLEGE.

April Meeting.

Tumor of Mediastinum.

DR. FRANK BILLINGS exhibited a patient with tumor of the mediastinum: John J., aged 39, married, a laborer, presented himself as a private patient on January 23. His family history was negative. His previous health had been good during his whole life, excepting an attack of bilious fever when 12 years of age. He uses alcoholic drinks very moderately; also tobacco moderately. He denied venereal disease.

A year and a half ago the present illness began with sharp lancinating pain in the right upper chest. This continued steadily, growing gradually worse until about three months ago, when he commenced having a sharp ache in the left upper chest. This was aggravated by exertion and was especially bad at night. This was accompanied with radiating pain in the left shoulder and down the inner side of the arm to the elbow. The pain is worse when lying down. It is also severe upon first moving about in the morning, but grows somewhat better after a little exercise. He has a dry cough aggravated by exercise and the dyspnea of exertion. The voice has never been changed in quality. The appetite is capricious but the digestion fairly good. The bowels are constipated.

He was 6 feet in height, weighing 135 pounds—a loss of 35 to 40 pounds from his normal weight. The skin was sallow and muddy, the general appearance one of cachexia. The eyes were negative, also the larynx. The superficial veins in the left pectoral region were dilated. Expansion of the chest was limited on both sides and apparently due to want of muscular power. The respirations were rather rapid and shallow. The apex-beat was visible and palpable in the sixth interspace in the nipple line. Dulness extended from the right sternal border at the top of the second rib to 1 centimeter outside the left nipple and upward on the left side to the third rib. No throbbing of the chest could be felt. At the apex of the heart a soft systolic murmur was transmitted downward into the seventh interspace and in the axillary line. No murmurs were heard at the base of the heart nor behind. The pulmonic and aortic second sounds were equal and not accentuated. The radial pulses were equal and synchronous, as were the carotids. The pulse was 96 per minute and occasionally intermitted. The lungs were negative, and also the abdomen. The urine was normal chemically and microscopically. The blood showed 4,200,000 red cells, 70 per cent. of hemoglobin and 8500 white cells.

This patient entered the Presbyterian Hospital on January 26, and many examinations have confirmed the findings named above. Recently the radial pulses have been unequal, the left the smaller with the patient sitting or standing, but they appeared equal when he was recumbent. With rest in bed he has become more comfortable until now he no longer suffers from pain of any importance in the chest. The physical findings are, however, the same, and an *x*-ray photo shows a mass in the mediastinum just above the base of the heart.

The diagnosis of mediastinal tumor is based on the fact that the patient denies venereal disease, has a family of healthy children, his wife has never miscarried, and his disease has been slowly progressive associated with loss of considerable weight accompanied with cachexia. Furthermore, by the fact that in spite of the pressure being great enough to interfere with the circulation in the vein and at a point which must be near the transverse arch of the aorta and therefore near the recurrent laryngeal nerve and blood-vessels of the left side, it has not produced a change in the pupils or larynx or pulse which one would expect to find in an aneurysm of the same region. On the other hand, the patient has improved with a rest and with moderately large doses of iodid, so that there is a possibility of aneurysm and the diagnosis of mediastinal tumor is therefore tentative.

Malignant Mediastinal Tumor.

DRS. E. FLETCHER INGALS and OTTO T. FREER presented the

history and pathologic specimen of a case of malignant mediastinal tumor occurring in a man about 35 years of age. The first symptoms, consisting of coryza and tickling sensation in the throat, had begun about four months before he came under observation. Dyspnea began about a month later and had steadily increased. At the end of two months there had been some swelling and congestion of the face, and he had first noticed distension of the superficial veins. There had been no real pain. When first seen the patient was strong and well nourished, but the cough was very troublesome and the dyspnea alarming if he lay down for a few minutes. There was dulness on the front of the chest over an area extending from the clavicles to the lower edge of the ribs, and laterally about three inches each side of the sternum, with flatness over the lower part of the right chest. The fluoroscope revealed a dark shadow nearly corresponding to, though somewhat larger than, the area of dulness. The respiratory sounds were absent over a large part of the dull area and the lower part of the right side, but nearly normal elsewhere. There were tracheal râles indicating compression of this tube. The superficial thoracic and abdominal veins were moderately enlarged, and on stripping the superficial epigastric veins the blood was seen to be flowing downward, because of obstruction of the superior vena cava. There were a number of slightly enlarged inguinal and cervical glands and the left vocal chord was paralyzed in the cadaveric position.

The patient grew steadily worse and died in about two weeks. Postmortem revealed a large anterior mediastinal sarcoma corresponding closely in size to the clinical findings. There were very slight changes within the abdominal cavity. There was a large collection of serum in the right pleura, extensive adhesions of the left pleura, and the heart and larger blood-vessels, together with the trachea, were much involved by the tumor mass. The very interesting pathologic changes were pointed out, which revealed the causes of the symptoms which had been present before death.

Calculi.

DR. ARTHUR DEAN BEVAN presented specimens of salivary stones, gall-stones, pancreatic stone, kidney stone, bladder stone, and reviewed the points in the etiology, pathology and natural history common to all of them. He also briefly reviewed the histories of the cases from which the specimens had been obtained. He stated that all true stones consisted of two substances of different origin; one the framework of organic material derived from the mucosa of the duct or reservoir in which the stone was formed; the second the crystallizable substances derived from the secretion of the gland in connection with this duct. He believes that the essential cause of true stone formation in any position is a catarrhal inflammation of the mucosa of mycotic origin.

In the case of salivary stones, in addition to this essential cause, i. e., mycotic infection, there is occasionally found, as a nucleus, a foreign body which has worked itself into the ducts of the salivary gland. The germs producing a catarrhal inflammation of the mucosa which lead to the development of salivary calculi gain access to the mucosa probably from the mouth, through an ascending inflammation. The finding of leptothrix and other germ forms by Klebs and Gallippe in salivary calculi seem to demonstrate this fact. One can not exclude, however, the possibility of such germs reaching the salivary glands and ducts through the circulation.

In connection with gall-stones, the same etiologic factors are present. The germs producing the essential catarrhal inflammation reach the mucosa of the bile-tract by an ascending inflammation from the intestines in some cases; in others probably through the blood carried to the liver. It is difficult to state which route is the more common as the germs usually found in gall-stones, the colon bacillus and the bacillus of typhoid, may reach the bile-tract by either route. Foreign bodies are occasionally, but very rarely, here, the nuclei of stone.

In connection with pancreatic stone, Dr. Bevan stated that the etiologic moments are practically the same as in gall-stone formation. He called attention to the difficulty of diagnosing pancreatic stone and to the probability that it is more common than we have heretofore believed; also that it is probably an important factor in acute pancreatitis and fat necrosis. The development of the surgery of the pancreas within the last few years makes us hopeful that in the near future we shall be able to diagnose and operate successfully for pancreatic calculi. In 1885, when Charles T. Parkes first suggested and planned choledochotomy, it seemed to the surgeons of that day as difficult an undertaking as the removal of a stone from the pancreatic duct seems to us to-day, and yet choledochotomy soon earned for itself the position of one of the most successful and brilliant of surgical achievements.

In demonstrating a number of calculi from the urinary tract, he stated that we had here, probably, again the same etiologic factors, viz., a catarrhal inflammation of the mucosa of mycotic origin. There can be no question that the germs producing this inflammation may reach the mucosa by ascending the urinary tract or may be brought to the kidney or bladder by the blood. He believes the most common germ form here is the gonococcus, which represents the first route, and the bacillus of typhoid and the colon bacillus both probably representing the second.

The natural history and symptom-complex is very much the same in all forms of calculi; they may remain for years innocuous without giving evidence of their existence; if they do give evidence of their existence, it is either because, mechanically, from change of position or increase in size, they interfere with the patency of the duct or reach a point in the duct too small for their accommodation, as in the passage of a stone through the common duct or a stone through the ureter; or more frequently the cause of symptoms is the occurrence of a fresh infection of the mucosa—this infection favored by the presence of the calculus.

The *x*-ray is of great value in determining the presence of urinary calculi whether in the kidney, ureter, bladder or prostate. This means of diagnosing has not as yet been satisfactory in determining the presence of gall-stones excepting in a limited number of cases. Within the last few years much brilliant work has been done in kidney-stone surgery, thanks to this means of diagnosis.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Annual Meeting, held April 15.

Parker Syms, M.D., president.

Adenoma Sebaceum: Nevus: Lateris Sarcoma Cutis.

DR. WILLIAM S. GOTTHEIL presented specimens and patients. The first was a rare form of adenoma, most often found on the scalp. The second growth was in the axilla of a boy of 10 years. Microscopic examination proved the dark linear excrescences to be true nevus. Two men with sarcoma cutis were also shown. The lesions were particularly well marked and numerous on the lower extremities. The microscope showed no evidence of tuberculosis. The speaker said that under proper treatment with heroic doses of arsenic the prognosis in such cases is good.

Diagnosis and Surgical Treatment of Prolapsed Kidney, with a Demonstration of a Simple Method of Examination for its Detection.

DR. AUGUSTIN H. GOELET was the author of this paper. He said that the condition was much more common than generally supposed, because often overlooked in the defective methods of examination commonly employed. According to his experience, and that of others, prolapsed kidney is found in one out of every four or five gynecologic cases coming under observation. Of this number 50 per cent. suffer from this dislocation of the organ. The etiology is obscure. The symptomatology is extensive, and includes persistent intestinal distention, gastric irritability, fatigue on slight exertion, dragging in the loins, irritability of the bladder, and occasionally attacks of acute pain simulating renal colic. The examination should be conducted with the patient standing against a wall or table, with the body bent slightly forward rather than backward. As

the patient takes a deep inspiration, the examiner grasps the loin just below the ribs with the thumb and fingers of the left hand, and then having drawn the skin tense by a downward motion of the right hand, this hand is used to push the displaced kidney, if there be such, upward against the left thumb. Coughing sometimes facilitates these manipulations. A distended gall-bladder, an omental tumor or a mass of impacted feces may be mistaken for prolapsed kidney, but it should be remembered that the kidney is more movable than the gall-bladder and less tender, that omental tumors are usually associated with malignant diseases in other parts, and that impacted feces may be dislodged by appropriate treatment. Dr. Goelet is of the opinion that the only proper treatment for such cases of prolapsed kidney as call for interference is the operation of fixation, and he looks upon this procedure as nearly devoid of risk and very satisfactory in its results. The patient should be kept recumbent for three weeks after the operation.

DR. GEORGE TUCKER HARRISON said that in spite of the beauty of the method of examination just described, the physician would meet with many disappointments in diagnosis, particularly if he does not sometimes resort to ether narcosis. He also deprecates the undue enthusiasm of the present day in regard to these cases and their management.

DR. J. RIDDLE GOFFE said that for some years past he has made use of this method, which he learned from Dr. G. M. Edebohls. Like most other surgeons he favors operating so as to bring the substance of the kidney directly in contact with the muscle.

DR. GOELET said that his method differs essentially from that which he understood is employed by Dr. Edebohls. His results in the operations for fixation of the kidney have been just as good when he has not opened the capsule.

Officers Elected.

The following are the newly elected officers: Dr. Parker Syms, president; Dr. Alexander Lambert, first vice-president; Dr. Francis W. Murray, second vice-president; Dr. Ogden C. Ludlow, secretary; Dr. Charles E. Denison, treasurer; Dr. Charles S. Benedict, member of executive committee.

JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

Meeting held April 15.

Dr. William H. Welch in the chair.

The Parasite of Cancer.

The meeting was given up to an exposition by Dr. Harvey R. Gaylord, chief of the New York State Cancer Laboratory at Buffalo, N. Y., of the organism which he believes to be the cause of cancer. The address was illustrated by drawings on the board and by lantern projections on the screen. Dr. Gaylord began by telling of the inception of the laboratory—the only one in the world exclusively devoted to the study of cancer—through the assiduous efforts of Dr. Roswell Park, who, being convinced by his personal experience that cancer is due to a parasite, induced the legislature of the state to make an annual appropriation. Three years ago Dr. Gaylord was placed in charge of the scientific part of the work. At that time fresh cancerous tissue was inoculated into the jugular vein of a dog. Twenty-two days later the animal died, when a distinct cancer was found in his lung. San Felice at this time arrived at the same result and cultivated a yeast as the cause. Russell and Plimmer, of England, did the same thing, and by injecting the culture into a dog caused a growth resembling a cancer. But upon repeating the experiment very many times these observers invariably failed to get the growth. In the one case they had succeeded in cultivating a yeast contamination. Repeating their experiments Dr. Gaylord proved the difference between their yeast protozoon and the true organism of cancer. The latter has a distinct cycle of development, slightly analogous to the plasmodium malariæ, but precisely like the vaccin organism, i. e., it passes through seven stages. In its first stage it can not be distinguished from the cocci. In its highest form it has ameboid movements and appears like a leucocyte except that it has in it a number of hyaline bodies resembling fat, but not true fat because not dissolved by ether or staining in osmic acid. These hyaline cells rise to the top in a hanging-drop, owing to their low specific gravity. By injecting into the cornea of a rabbit, it is found that the cancer protozoon and the vaccin bodies develop alike, but the former more slowly. Dr. Gaylord's method is to take the fluid from the abdominal cavity of patients operated on for cancer. This gives a practically pure culture of the protozoon, mostly in its hyaline form. One or 2 c.c. was inoculated in 100 animals, dogs, rabbits, guinea-pigs and mice and the same organisms were recovered from the various organs of the animals in every case examined. In 12 of the animals distinct cancers were formed. He thought that the amount of infectious material was too great for the animals in the other cases and they died from acute cancerous infection. Bacteriologic examinatons were made in every case with negative results. Dr. Sjoebring, of Lund, Sweden, has succeeded in making a medium of human fat on which the protozoon grows and when inoculated into animals produces cancers. Toward the death of a person with cancer these bodies are found in the blood. Injected into animals, they may be recovered and reinjected indefinitely. In a piece of cancer dried for four months infection resulted on its injection.

Pfeiffer described this protozoon as the cause of cancer as far back as 1891, and has recently reached precisely similar results to Gaylord's, but by different methods. Sjoebring has also stated observations precisely similar. These observers, with Plimmer, San Felice, Funk, Eisen, of San Francisco, and others, deserve as much credit as any one, he said.

PHILADELPHIA PEDIATRIC SOCIETY.

Meeting held April 16.

President Dr. T. S. Westcott in the chair.

Indigestion in Infants.

DR. L. EMMET HOLT, New York City, by invitation, read a paper entitled "Some Forms of Indigestion in Infants, and Young Children, with Special Reference to their Dietetic Treatment."

The speaker stated that the chronic forms of indigestion in children required most attention on the part of the physician. In the majority of instances it is the method of feeding that determines the degree of digestion. Much harm to the digestive powers of the infant occurs during the first few days, and frequently when the infant is turned over to the physician a considerable period may be required to correct the diet tic errors already committed. As to the milk to be employed, he prefers percentage milk feeding. A common formula would be 1 per cent. fats, 6 per cent. sugar, and .5 per cent. proteids. With proper food the child should not suffer from colic, but should gain rapidly in weight. Infants frequently suffer from constipation, which in itself should not always be considered harmful. The use of purgatives for the purpose of controlling constipation frequently sets up a diarrhea which does more harm than the original trouble. In many instances it may be necessary to begin artificial feeding within the first twenty-four hours. Rarely has gastric dilatation anything to do with the existence of constipation in children. Few things are more irritating to a child's stomach than the organic acids—butyric—found in milk, when in abnrmal amounts. In some instances it requires the addition of 25 per cent. of lime-water to neutralize the excessive acidity. Frequently stomach washing is demanded, and it is surprising to find such large quantities of mucus as are at times present in the stomach of young infants. Within the first few days, if vomiting be severe, often all that will be required is the administration of bicarbonate of soda in very weak solution. In one instance he gave barley water to a patient in whom indigestion had been pronounced, and with relief of the symptoms within twenty-four hours. The carbohydrates in this instance probably inhibited the development of acid fermentation. In some cases, when death occurs from apparent toxemia, the micro-organisms may not be found in the milk but may exist in the child. In one such instance the stomach was irrigated, and rectal feeding enjoined, with relief of this condition.

In some instances indigestion occurs with wet nursing. In one he found that the nurse's milk contained an excessive quantity of fats. Drawing the milk, skimming, and the addition of lime-water gave good results. Later the child was applied to the breast with rapid gain in weight. In inanition there is a great reduction in the amount of chlorids excreted. In instances in which diarrhea, greenish stools, fever and exhaustion are seen the milk may often be diluted so that the fats equal about 2 per cent. and the sugars 50 per cent. with immediate relief. When one kind of milk persistently disagrees with a child a change of food is indicated. In some cases it is best to take the child off of cow's milk entirely and give dextrinized or farinaceous foods. Rickets and scurvy may result from improper feeding. In some cases rectal feeding is of great importance. In such cases from 1 to 1½ ounces of peptonized milk may be given. In case of eructation of sour food rectal feeding may relieve the condition. Frequently the addition of a small amount of brandy to the peptonized milk may do good.

Sometimes dilution of the milk to reduce the fats is the very worst thing which can be done. Dr. Holt instanced a case in which this caused harm, and when the child was given milk with a very large amount of fat it thrived best. Each case demands a separate line of treatment. We must not be wedded to any one special line. Frequently the very opposite will prove the best.

DR. J. P. CROZER GRIFFITH expressed belief that the good results Dr. Holt always obtains are in part due to his close attention to the smaller details of infant feeding, and the close watch he keeps on the life of the patient. One should always personally inspect the napkins of infants when faulty digestion is present. We must not leave too much to the nurse. The proper system of feeding in great part depends on a correct insight into the condition present. As to the correction of constipation, it is usually best to let it alone, rather than give a medicine and cause diarrhea.

DR. E. E. GRAHAM has seen good results follow when cow's milk was prohibited, and albumin water or broths given. The peptonization of milk is probably not resorted to as frequently as it should be. Rectal feeding is frequently a valuable aid.

DR. FREDERICK A. PACKARD was glad to note that the speaker was not inclined to lay stress on the subject of bowel washing, which some advised being done every few hours.

DR. D. J. M. MILLER was impressed with the importance of proper feeding within the first twenty-four hours after birth. Milk mixtures, when too much diluted, may not always be borne best.

DR. J. MADISON TAYLOR thinks much depends on the adoption of common sense rules.

DR. ALFRED STENGEL believes that we have hardly reached that stage when the subject of infant feeding can be spoken of as depending absolutely on definite fundamental principles. We attempt to compare the results obtained in the case of diseased conditions with those prevailing during health. In his opinion probably the good results achieved in correcting the diet of adults depend not so much on the special kind of food but on the amount of it. In some instances this rule holds good in the case of children. He has frequently found that, by reducing the fats and proteids, and increasing the carbohydrates, disagreeable features subside. In other cases he has found that lavage gave tolerance to a special kind of food when not previously well borne.

DR. T. S. WESTCOTT spoke of a case in which cream had not been well borne. In this instance he could not give even a few drops of cream, but the same percentage of cream, when given as part of milk, was well borne. Later the cream could be gradually increased.

DR. HOLT, in closing, stated that he does not approve of giving cow's milk in cases of acute indigestion. The paper for the most part dwelt on the chronic forms of this condition. In one instance he has seen rectal irrigation kept up for many months, doubtless doing harm. The only symptom had been some mucus in the stools. He again wished to make the point that no fixed rule can be formulated so as to meet the indications in all cases.

Therapeutics.

Chorea Treated by Sodium Cacodylate.

Lannois has used sodium cacodylate in treatment of chorea, because of its innocuity, in relatively large doses. He gave it hypodermically in doses of .02 to .04 per day. He continued it for five days and began again after an interval of five days. Three weeks' treatment usually sufficed when other treatment failed. He records several cases in which good results were obtained by its use.

Sodium cacodylate is a white amorphous powder, soluble in water, frequently given subcutaneously, and is a good substitute for other arsenic preparations. It contains 48 per cent. of arsenic and is comparatively free from poisonous properties. It may be given by the mouth, well diluted, in one-half grain doses, gradually increased. By the French physicians it is very frequently given per rectum. It has been employed with decided improvement in all the diseases in the treatment of which arsenic preparations are indicated.

Treatment of Eczema.

Abraham, in *The Clinical Journal*, thinks that the treatment should consist in quieting the inflammatory condition, in removing the hyperemia and lessening the exudate, and at the same time to asepticise and protect the parts.

FOR THE EXUDATION.

℞.	Zinci oxidi	℥i	4
	Acidi boracici	℥ss	16
	Pulv. amyli	℥ss	16

M. Sig.: Use as a dusting powder.

TO REMOVE THE HYPEREMIA.

℞.	Zinci oxidi	gr. xx	1	33
	Hydrarg. subchloridi	gr. x		66
	Plumbi acetatis	gr. x		66
	Ung. hydrarg. nitratis	gr. xx	1	33
	Vaselini q. s. ad	℥i	32	

M. Sig.: Apply locally, after first bathing the parts with a weak tar lotion.

Internal treatment should be combined with the local treatment: Alkalies, tonic bitters and aperients for the digestive tract. Full medicated baths containing starch, bran and a small amount of tar. He has found, in some cases, the modified Lassar's paste to be beneficial, prescribed as follows:

℞.	Pulv. amyli			
	Zinci oxidi, āā	℥ii	8	
	Acidi salicylici	gr. x		66
	Vaselini	℥ss	16	

M. Sig.: To be thickly applied after the bath.

Treatment of Diabetes with Sodium Salicylate.

R. T. Williamson, of London, in *British Medical Journal*, in an article on treatment of glycosuria and diabetes mellitus, concludes that in certain mild cases of diabetes or in persistent glycosuria, it has a decided action in markedly diminishing the sugar excretion. He states that it is not suitable in all cases of diabetes, however. Its administration should be watched closely, and it should be administered in fairly large doses. It is best to commence with 10 grains three times a day, then four times a day, and increase gradually up to 15 grains four or five times a day, watching for toxic symptoms. In severe forms of diabetes patients frequently gain in weight while taking the drug. It is better borne if well diluted.

Potatoes in Diabetes Mellitus.

A. Mosse, as noted in the *Indian Med. Rec.*, states that potatoes should have a place in the dietary of diabetics. He cites two cases in which the wisdom of such addition to the fare was evidenced by a prompt decrease in the amount of sugar excreted in the urine. The potatoes should be given to the amount of from two to three pounds daily, as a substitute for the whole or a part of the bread allowed. The cases which seem to respond best to such management are those of medium intensity and of the arthritic type.

Treatment of Influenza.

L. Bourget, in *Ther. Monat.*, states that the treatment of

influenza and rheumatism should be carried out along similar lines inasmuch as the etiological factors are similar, and consequently he employs the following as a liniment:

℞.	Acidi salicylici	ʒi	4	
	Methyl salicylatis	ʒiiss	10	
	Olei eucalypti	ʒiss	6	
	Olei salviæ	m. l	3	25
	Olei myristicæ	ʒi	4	
	Olei camphoræ	ʒi	32	
	Spts. juniperis	ʒiv	128	

M. Sig.: Put the patient to bed and rub this liniment into both the anterior and posterior portions of the chest two or three times a day.

Precautions in the Examination of Pregnant Women.

The *Vermont Med. Monthly* gives the following general precautions to be observed by the obstetrician: 1. The hands of the obstetrician are his most valuable agents. 2. That any infection is almost invariably transmitted by the examining finger and less often by unclean instruments. 3. Pregnant and parturient women can be very speedily infected by a single examination. 4. Internal examination should be as infrequent as possible during pregnancy and labor, resorting to it only when external examination does not afford sufficient information.

Subcutaneous Injections of Gelatin for Hematuria.

Gossner, of Königsberg, as noted in the *British Medical Journal*, records the cure of a case of hematuria by first administering tannin, lead acetate, ergotin, etc., but without any effect on the bleeding. Gelatin was then tried as a subcutaneous injection into the tissues of the thorax, the preparation being carefully sterilized and warmed and 200 cubic centimeters being injected. Severe pain, headache, vertigo and general restlessness followed, which, however, soon subsided and the next day the hematuria still showed absence of blood. Therefore the cure was regarded complete.

Treatment of Beri-Beri.

B. M. Gibson, of Edinburgh, in the *Jour. of Tropical Medicine*, gives the following treatment of beri-beri, and as this is of more than passing interest to the medical fraternity of the United States we give his outline of treatment, which is as follows: The first step is to remove the patient from the place where he contracted the disease. His diet should then be changed to beans and fat pork in order to supply nitrogen and fat. The following prescriptions are recommended:

℞.	Tinct. digitalis	ʒii	8	
	Tinct. ferri perchloridi	ʒii	8	
	Acid. phos. dil.	ʒiii	12	
	Infusi calumbæ q. s. ad	ʒvi	192	

M. Sig.: One tablespoonful three times a day.

Or:

℞.	Liq. arsenicalis			
	Liq. strychninæ, āā	m. xxvi	1	70
	Liq. ferri perchloridi	ʒiss	6	
	Glycerini	ʒi	32	
	Infusi calumbæ q. s. ad	ʒvi	192	

M. Sig.: One tablespoonful three times a day.

Or:

℞.	Quininæ sulph.	ʒi	4	
	Ferri sulph.	gr. xxxvi	2	36
	Mag. sulph.	ʒiv	16	
	Acidi sulph. dil.	ʒi	4	
	Spts. chloroformi	ʒii	8	
	Aq. menth. pip., q. s. ad	ʒvi	192	

M. Sig.: One tablespoonful three times a day.

He states that in dropsical cases, one tablespoonful of brandy given every two hours is very effective.

Treatment of Typhoid Fever by Enemata of Olive-Oil.

O. F. Paget, in *The Lancet*, states that splendid results are derived in treatment of typhoid fever by slowly administering every twelve to fifteen hours, an enema of about one pint of olive-oil; this should be retained in the bowels for several hours, if possible. If after twelve hours it is not expelled it may be discharged by giving an ordinary soap and water enema, three hours after which another enema of olive-oil may be given. The daily administration is discontinued after one week, and then may be given only when the temperature is elevated or the bowels constipated. If diarrhea is present olive-oil should always be given and the use of bismuth is not necessary. He claims that the death-rate under this treatment is *nil*. Heart failure, sequellæ, tympanites or perforation of the bowels is not present, nor are cold baths necessary.

Sexual Irritability of the Male.

A. Sander, in *Med. News*, states that sexual irritability in the male may be classified as belonging to the lithemic type, the nervous type and the third class comprises those in which gonorrhea has been an efficient cause. For the first and second classes he recommends moderate exercise in the open air. The diet of the lithemic should be properly regulated, avoiding too much tea, coffee, and alcohol. Fish and poultry are good. To aid elimination he recommends:

℞.	Sodii et potass. tartratis	ʒii	64	
	Acidi pot. tartratis	ʒi	32	

M. Sig.: One teaspoonful in water upon rising.

To allay the sexual passion of the neurasthenic, one dram doses of fluid extract of salix nigra at bed-time are usually effective. For the nervous system:

℞.	Liq. potassii arsenitis	ʒi	4	
	Ext. ergotæ fluidi	ʒiii	12	
	Tinct. capsici	m. x.		66
	Glycerini	ʒi	32	
	Aquæ q. s. ad	ʒviii	256	

M. Sig.: One tablespoonful three times a day.

Acne Rosacea.

℞.	Sulphuris precip.	ʒi	4	
	Zinci oxidi	ʒiss	6	
	Calimini	ʒii	8	
	Glycerini	ʒiss	6	
	Aq. rosæ q. s. ad	ʒiv	128	

M. Fiat lotio. Sig.: Apply locally night and morning.

Medicolegal.

Two Thousand Dollars the Value of a Boy's Life.—The Supreme Court of New Jersey declares, in the case of Rowe vs. the New York & New Jersey Telephone Company, brought to recover damages for the death of a boy about 12 years old, caused by negligence, that it is unable to see how, on any rational computation of probabilities, the pecuniary loss resulting to his next of kin from his death could equal $5,000, as assessed by the jury, and makes a reduction of the damages to $2,000 the condition of not requiring a new trial.

Permissible Basis and Form of Expert Evidence.—The Supreme Court of Alabama says, in the case of the Louisville & Nashville Railroad Company vs. Stewart, that opinion evidence of experts, such as physicians, may be based on facts of which the witness has actual knowledge, as well as on an abstract hypothesis. And it holds that it is not a valid objection to a physician's opinion concerning cause and effect of disease and injury that it assumes the form of a conclusion.

When Disease is Indirectly Cause of Death from Injury.—The Supreme Court of Vermont says that the circumstantial evidence bearing on the cause of the insured's death, in the case of Clark vs. Employers' Liability Assurance Company, presented the question whether he was stricken with spontaneous apoplexy and fell in a place where the wheels of his wagon passed over his neck, or whether he accidentally fell where the wheels passed over him and suffered apoplexy as a result of the injuries received. The insurance policy did not insure against death occasioned wholly or partly, directly or indirectly, by disease or bodily infirmity. And the court holds that, inasmuch as the policy did not insure against an accidental death caused indirectly by disease, if the insured's fall was caused by disease, that disease was the cause of his death, within the meaning of the exception. His helpless plight in the tracks of the approaching wheel was due to the apoplectic stroke, and to that alone. An accidental death by crushing, it goes on to say, is caused indirectly by disease, if the person

falls in the place of danger because of disease. The death is caused directly and wholly by the crushing, but it is nevertheless caused indirectly by the disease. Wherefore, it holds that it was necessary for the beneficiary suing on the policy to show, not only that the injury received was the direct cause of death, but that disease did not indirectly cause the death by subjecting the insured to that injury.

Physical Examination in Action to Annul Marriage.—A motion was made before Mr. Justice Leventritt, at a special term of the Supreme Court of New York, New York County, to compel the defendant to submit to a physical examination before trial, in an action brought for the annulment of a marriage on the ground of fraud, in a case the title of which is "Anonymous." The alleged fraud consisted in representations of good health, relied on by the plaintiff, when the defendant was, in fact, at the time of his marriage, afflicted with the disease known as "syphilis." The right exercised from the earliest days by courts having jurisdiction in divorce matters, in ordering inspection, the judge says, is not statutory. And he calls attention to the fact that in all the cases cited here, in which an examination was ordered, relief was sought on the ground of impotence, and he says that he was referred to no authority in which an examination had been directed to establish the existence of specific disease. But he declares that he can discover no difference in principle where the essential elements authorizing inspection in the one case exist in the other. A marriage, in his opinion, should be annulled as much on the ground here assigned for relief as in the case where consummation is rendered impossible by reason of the physical defect or malformation of one of the contracting parties. The state which may not improperly be considered a third party, as it were, to every marriage contract, has in a proper case as much interest in dissolving the marriage tie as in upholding it. Where a person to his knowledge afflicted with a most grievous venereal disease, contagious in a very high degree, and which, even under the most favorable circumstances, requires years before it yields to treatment, and may even then for a long time still lurk in the system, a source of hidden danger, marries an innocent girl, under representations that his health is sound, threatens her with infection, and their offspring with hereditary disease, a case, the judge holds, is presented for state interference and judicial annulment. So, while he says that it is quite true that fraudulent representations as to good health, as that term is generally understood, do not vitiate the marriage compact, he sees in this case, if the allegations be true, an instance of extreme fraud, and a misrepresentation as to health not such a one as is contemplated by the authorities. And he is satisfied that the power exists, within narrowly circumscribed limits, in an action of this nature, to compel an inspection of the person of the defendant; that it is inherent in the court in this class of actions; but that the remedy is so extraordinary, and necessarily so violative of the privacy of person, that its application should be restricted to extreme cases, and then not exercised before it is apparent that no other means of proof are available. An examination of this nature, he further says, can and should never be granted as a matter of course. The absolute necessity therefor must unmistakably appear. A proper regard for the rights of the individual requires an adherence to the rule that the necessity for the examination should appear on the trial, and not upon facts shown on a preliminary hearing.

Society Can Not Enjoin Payment for Vaccination.—The Supreme Court of Alabama says that the case of the Commissioners' Court of Perry County vs. the Medical Society of Perry County was brought by the medical society, a corporation organized under the charter of the Medical Association of the State of Alabama, and three practicing physicians of said county, who were members of said society and constituted the board of health of the county, who sued as individuals. The theory proceeded on was that the medical society of the county had the exclusive right and power to appoint or employ persons to vaccinate the people and fumigate the houses, etc., in prevention of the spread and stamping out the contagion of smallpox, which had broken out in one section of the county, and that the commissioners' court had no such power or authority; and it was averred that, notwithstanding such want of power in said court, that body had employed a certain party to perform that service at a salary or wage of $100 a month, and that said party was proceeding to perform his part of the contract. The prayer was that said party be enjoined from performing said contract; that the judge of probate, the commissioners' court, and the treasurer of the county be each enjoined from allowing or paying the said party's claim for such illegal services; and that he be enjoined from collecting the same. But, as it was averred in the answers and proved on the hearing that the party had completed the performance of his contract on the day the bill was filed, the court says that no case was made for an injunction perpetually restraining him from further services under the contract. Moreover, the court holds that the medical society and individuals suing with it had no standing or right in a court of equity to restrain the commissioners' court, the probate judge, and the treasurer of the county, or any of them, from paying out moneys belonging to the county under any circumstances whatever. It says that it is too plain for argument that the medical society of the county, even assuming it to be a corporation with capacity to sue, and to be vested with the statutory powers and duties in respect to public health—questions none of which the court decides here—has as such no interest whatever in the disposition the constituted county authorities may make of county funds, and can not be damaged, or in any wise prejudiced, by any appropriation of such funds, authorized or not, which the commissioners' court may determine on. Whatever may be the powers in other respects of the medical society of a county under the statute, it is clear beyond cavil that it has no power in its corporate capacity, if it is a corporation, to sue for the correction or prevention of public abuses committed or threatened by county officers in the disbursement of county funds. Again, the court says that the conclusions of the medical society that it had been "crippled and injured in the performance of its duties under the laws of this state," by the action of the commissioners' court in making this contract would be entirely insufficient as pleading to show any crippling or injury. The facts must be stated. Wherefore, the court holds that the society was without interest in the case made at the hearing, and should not have been awarded relief. Besides, it holds that the individual complainants, considered apart from the medical society, had no title to the relief sought, it not being alleged that they were citizens and taxpayers of the county, nor that they were property owners and taxpayers therein.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

New York Medical Journal, May 4.

1 *Abdominal Pain in Typhoid Fever. Thomas McCrae.
2 *Spinal Anesthesia by Cataphoresis. J. Leonard Corning.
3 The Pathology and Bacteriology of Uretero-intestinal Anastomosis. (To be concluded.) F. Robert Zeit.
4 *The Use of the Suprarenal Capsule in Diseases of the Heart. (To be concluded.) Samuel Floersheim.
5 *The Law and the Inebriate; With Remarks on the Treatment of Inebriety. Joseph Collins.

Medical Record (N. Y.), May 4.

6 *The Operation for Radical Cure of Inguinal Hernia, at the End of the Century, as I Saw it Performed by Bassini, Lucas-Championnière, De Garmo, Coley, and Broca. Campbell Ford.
7 *Varicella in Adults. Alvah H. Doty.
8 A Plea for the Conservation of Breast Milk in whole or in part. Thomas S. Southworth.
9 *On Bandages for Nephroptosis. George M. Edebohls.
10 *Version: Indication, Technique, Limitation. S. Marx.
11 *Axis-Traction Forceps. Egbert H. Grandin.
12 *Cesarean Section. Edwin B. Cragin.

Medical News (N. Y.), May 4.

13 Medical Department of the University of Pennsylvania. Charles W. Dulles.
14 *A Report of Twenty-four Operations Performed during Spinal Analgesia. William S. Bainbridge.
15 *Some Sources of Error in Laboratory Clinical Diagnosis. Theodore C. Janeway.

Boston Medical and Surgical Journal, May 2.

16 *Contusions of the Abdomen. Charles L. Scudder.
17 *Observations on the Use of Antistreptococcus Serum in the Treatment of Puerperal Sepsis with a Report of Five Cases. Frank A. Higgins.
18 A Case of Cesarean Section in a Face Presentation, Complicated by Uterine Fibroid. Emma S. Call.
19 Notes from the Neurological Department of the Massachusetts General Hospital. Exophthalmic Goiter and Fright. E. W. Taylor.

Philadelphia Medical Journal, May 4.

20 *Puerperal Polyneuritis and Poliomyelitis. James Stewart.
21 *Localization of Sound and its Bearing on Hearing—Especially in Unilateral Deafness. B. Alex. Randall.
22 *German Clinics of To-day. John C. Hemmeter.
23 Volvulvus and Intussusception of Meckel's Diverticulum. Joseph McFarland.
24 *Deaths from Anesthetics. D. H. Galloway.
25 *Esophoria, or Latent Squint. Francis Valk.
26 *Strangulated Hernia. Walter Lathrop.
27 Ammonium Persulphate Solution. A New Decolorizing Fluid for Staining Spores and Sputum. Robt. L. Pitfield.

American Medicine (Philadelphia), May 4.

28 *An Analysis of my Vaginal Ablations in 181 Cases of Pelvic Inflammation and Uterine Fibroid Degeneration. (Concluded.) W. R. Pryor.
29 *Inguinal Hernia. B. Merrill Ricketts.
30 Vaginal False Membrane due to Bacterium Coli. J. N. Hall.
31 *A New Series of Anaerobic Bacteria. Louis LeRoy.
32 *Conclusions from Personal Observations of Compound Fractures. Douglas C. Moriarta.
33 The Food Value of Alcohol, and Professor Atwater's Experiments and Teachings. (To be concluded.) John Madden.
34 *Some Remarks on the Cumulative Action of Digitalis, with an Illustrative Case. Edwin Zugsmith.
35 *Prolonged Intubation. Edwin Rosenthal.

Cincinnati Lancet-Clinic, May 4.

36 *Carbuncle. Robert Carothers.
37 Enormous Gall-stones with Ovarian Cyst and Uterine Fibroid. J. F. Baldwin.

St. Louis Medical Review, May 4.

38 *Complicated Ovarian Tumors. Emil Ries.
39 Case of Vaginal Hernia Complicated with Pregnancy and Sepsis. Frank A. Glasgow.
40 Librarian's Report to the St. Louis Medical Library Association for the Year Ending April 24, 1901. Frank J. Lutz.

Medical Fortnightly (St. Louis), April 25.

41 Heredity, Criminality, and Degeneracy. H. Hatch.
42 Chronic Gastritis. Frank Parsons Norbury.

Pediatrics (N. Y.), April 15.

43 *Two Starvations. J. C. O'Day.
44 *Inheritance of a Gouty or Uric Acid Toxemia in Children, with Statistics of Fifty-seven Cases. Carl N. Brandt.
45 Some Pulmonary Affections of Children Following the Infectious Diseases. Albert M. Cole.

Chicago Medical Record, April.

46 The Clinical Type of Neurasthenia. Harold N. Moyer.
47 Etiology of Neurasthenia. Sanger Brown.
48 On the Pathology of Neurasthenia. L. Harrison Mettler.
49 Treatment of Neurasthenia. Archibald Church.
50 *State Aid in the Prevention of Tuberculosis. C. O. Probst.
51 The Management of Fevers. I. N. Love.
52 *Miscarriage of Municipal Sanitation. Ernest Wende.
53 *Demands of Sanitary Science. H. M. Bracken.
54 Effect of Physical Conditions and Sera on the Typhoid Bacillus. Adolph Gehrmann.
55 Surgical Cases (Inoculation, Tuberculosis from Hides, etc.) Daniel N. Eisendrath.
56 A Case of Raynaud's Disease. Charles Louis Mix.
57 *The Family Physician's Treatment and Prevention of Purulent Otitis. H. Gradle.
58 A Case of Gangrene of the Appendix Simulating Infection Following Labor. Denslow Lewis.
59 Vesicosigmoidal Anastomosis. E. J. Senn.
60 Genito-Urinary Surgical Notes. F. Kreissl.
61 Specimen Obtained from a Bottini Operation. E. W. Andrews.

Alienist and Neurologist (St. Louis), April.

62 Friedrich Nietzche: A Study in Mental Pathology. William W. Ireland.
63 *The Successful Management of Neuralgia. C. H. Hughes.
64 Degeneracy Stigmata as a Basis of Morbid Suspicion. A Study of Byron and Sir Walter Scott. James G. Kiernan.
65 Medicine in 1800. Samuel L. Mitchell.
66 Morphinism and Crime. T. D. Crothers.
67 The Legal Disabilities of Natural Children Justified Biologically and Historically. (To be continued.) E. C. Spitzka.

Clinical Review (Chicago), May.

68 On the Use of General Anesthetics. Franklin C. Wells.
69 Clinical Lectures upon the Etiology, Pathology, Diagnosis and Treatment of Tumors. A. H. Levings.

Journal of Cutaneous and Genito-Urinary Diseases (N.Y.), April.

70 *Benign Epithelial Tumors of the Skin. B. H. Buxton.
71 Case of Dermatitis Herpetiformis Illustrating an Unusual Pustular Variety of the Disease. Grover William Wende and Herbert D. Pease.
72 *Impetigo Contagiosa Bullosa and its Bacteriology. Martin F. Engman.
73 Report of Two Cases of Impetigo Contagiosa Bullosa: One of them Fatal. Joseph Grindon.

Bulletin of the American Academy of Medicine (Easton, Pa.), April.

74 The Kentucky Medical Law. J. N. McCormack.
75 Associate Medical Examining Boards. Charles A. Groves.
76 A Brief Review of the Medical Curriculum of the United States, with Special Reference to the Defects, and Indicated Modifications as Demonstrated by the State Medical Examination for Pennsylvania. Henry Beates, Jr.
77 The Co-operation of the Medical Profession of the United States with the National Confederation of the State Medical Examining and Licensing Boards, in Establishing Interstate Reciprocity for the License to Practice Medicine. Emil Amberg.
78 What Steps Shall be Taken to Establish a Uniform Standard of Preliminary Requirements in Accordance with the Recommendations Contained in the Report of the Committee on Minimum Standards, Adopted June, 5, 1899. N. R. Coleman.

Illinois Medical Journal (Springfield), April.

79 *Paralysis of the Sphincters of the Anus Caused by the Forcible Dilatation of That Orifice. Edmund Andrews.
80 Rectal Fistula. A. E. Halstead.
81 *The Diagnosis of Rectal Diseases. J. Rawson Pennington.
82 *The Treatment of Hemorrhoids. N. H. Henderson.
83 *Acute Hemorrhagic Encephalitis. Charles D. Center.
84 *What Shall the Harvest Be? (Public Hygiene and Morals). R. H. Henry.
85 The Medicolegal Status of Abortion. O. B. Will.
86 The Treatment of Tuberculosis and Other Abscessses and Local Infections by Pure Carbolic Acid, with Report of Cases. I. R. and G. W. Walker.
87 Practical Observations on the Chemical Effect of a Few of the Older and Some of the Newer Remedies. E. L. Herriott.

Journal of Medicine and Science (Portland, Me.), April.

88 The Availability of the Nutrients and Potential Energy of Food Materials. Charles D. Woods.
89 The Process of Digestion. Chas. O. Caswell.
90 A Reply to Dr. D. A. Robinson's Article. Morris Longstreth.

International Medical Magazine (N. Y.), April.

91 Treatment of the Different Varieties of Chronic Endometritis. Augustin H. Goelet.
92 Impetigo Contagiosa. Jay F. Schamberg.
93 Some General Remarks on Electricity in Gynecology. G. Betton Massey.
94 Rhinoliths, with Report of Two Cases of Diagnostic Interest. Carle Lee Felt.
95 Laceration of the Perineum and its Primary Repair. E. E. Montgomery.
96 The After-Treatment of External Perineal Urethrotomy. J. D. Thomas.
97 The Method of Removing and Preparing Portions of Tissue from the Uterus for Diagnostic Purposes. W. Wayne Babcock.

American Gynecological and Obstetrical Journal (N. Y.), April.

98 *The Treatment of Displacement of the Uterus, with Adhesions. F. H. Davenport.
99 *Causes of Dysmenorrhea. Albert M. Judd.
100 The Causes and the Significance of the Oostetric Hemorrhages. J. Clifton Edgar.
101 *Osteofibromyoma of the Uterus. George Ben Johnston.
102 *A Case of Natural Uretero-intestinal Anastomosis. C. A. Kirkley.
103 *The Treatment of Cancer of the Uterus. J. Wesley Bovée.

St. Paul Medical Journal, May.

104 Psychotherapeutics. J. W. Frizell.
105 Psychology of the Medical Profession. Wm. B. Lyman.
106 The Medical Profession. D. W. Day.
107 Rickets. John Specht.
108 Feeding of Infants. Caroline Hedger.
109 The Modern Treatment of Tabes Dorsalis, with Report of a Case. Chas. R. Ball.
110 Glaucoma. Thomas McDavitt.
111 Adrenalin, the Active Principle of Suprarenal Extract, the Most Powerful Hemostatic Known. Frank C. Todd.
112 Excision of the Rectum for Cancer. James W. Robertson.
113 Vesico-vaginal Fistula Repaired Under Hypnosis. A. Shimonek.

University of Pennsylvania Medical Bulletin (Philadelphia), April.

114 A Series of Twelve Articles on Medical Men Prominent in the Civil and Military Affairs of Revolutionary Times. Francis R. Packard.

115 *Notes on Fifty Operations for Otitic Extradural Abscess. B. Alex. Randall.
116 Primary Sarcoma of the Spine. James K. Young.
117 A Critique of Certain Methods of Gastric Analysis. David L. Edsall.
118 Adrenalin, the Active Principle of Adrenal Extract, a Proposed Agent in Morphin and Opium Poisoning, in Circulatory Failure, in the Prevention of Collapse in Anesthesia, and in Allied Conditions—A Preliminary Note. Edward T. Reichert.

International Journal of Surgery (N. Y.), May.

119 Practical Suggestions on the Treatment of Appendicitis. Henry Flood.
120 Regional Minor Surgery. (Continued.) George G. Van Schaick.
121 The Ligament Operation. W. H. Maxson.
122 Practical Suggestions on the Treatment of Rectal Diseases. (Continued.) James P. Tuttle.
123 Nose and Throat Work for the General Practitioner. (Continued.) George L. Richards.
124 Two Interesting Cases of Appendicitis. A. R. Small.
125 Enlarged Prostate, Cystitis, Wound of the Urethra and Abscess of the Testicle. L. H. Schwerin.

Southern California Practitioner (Los Angeles), April.

126 Tuberculosis Literature for the General Practitioner and His Work in the Combat Against the "Great White Plague." S. A. Knopf.
127 *Rectal Reflexes. Wellington Burke.
128 *Oophorectomy and Hysterectomy for Epilepsy. Walter Lindley.

Columbus Medical Journal, April.

129 Operations for Cleft Palate and Hair Lip. Dudley P. Allen.
130 Examination of Candidates for Entrance into Medical Colleges. C. E. Albright.
131 Preliminary Education for Entrance into Medical Colleges. Hugh Hendrixson.

Vermont Medical Journal (Burlington), April.

132 A Few Rambling Thoughts on Medical Matters. C. D. Albro.
133 A Case of Chronic Rheumatism. L. B. Smith.
134 A Non-surgical Treatment of Hemorrhoids with Clinical Reports. Eugene C. Underwood.

Therapeutic Gazette (Detroit), April 15.

135 Puerperal Mastitis: Its Prevention and Treatment. Edward P. Davis.
136 Gastrostomy for the Relief of Painful Deglutition Incident to Tuberculous Laryngitis. Edward Martin.
137 *The Blood-Pressure-Raising Principle of the Suprarenal Glands—A Preliminary Report. Jokichi Takamine.
138 *Physiological Relations of Scopolia Carniolica to Atropa Belladonna. Horatio C. Wood, Jr.
139 Gastric Ulcer: Its Etiology, Symptomatology, and Diagnosis, with Special Reference to Treatment. (Continued.) D. D. Stewart.
140 Management of Arrested Posterior Positions of the Vertex. Richard C. Norris.
141 Hydrocele and its Treatment; Summary of 338 Operations; Description of a New Method Suggested by Doyen for the Radical Cure of Hydrocele of the Tunica Vaginalis Testis. Orville Horwitz.

Georgia Journal of Medicine and Surgery (Savannah), April.

142 *Relation of the Profession to the General Public. R. R. Kime.
143 An Important Class of Skin Diseases and their Treatment. Eugene C. Underwood.
144 Coughs: Their Suppression and Cure. Louis DeLorne.

Texas Medical News (Austin), March.

145 Subarachnoid Cocainization of Medullary Anesthesia, with Report of Cases. J. G. Boyd.
146 Scarlet Fever. W. T. Shearer.

AMERICAN.

1. **Abdominal Pain in Typhoid.**—From an analysis of 500 cases classified as regards pain the following conclusions are deduced by McCrae: 1. About two-fifths of the patients are free from pain or tenderness, rather less than one-fifth have tenderness only, and pain is present at some time in about two-fifths of the cases, but during the course only in about one-third. 2. Pain due to some condition other than the specific bowel lesions was present in about 14 per cent. of all cases and in about two-fifths of the patients having pain during the course. 3. Pain occurred with hemorrhage or perforation in about 5 per cent. of all cases and in about 15 per cent. of the cases in which there was pain during the course. 4. Pain was most constantly present with perforation, when it was usually sudden in onset, severe in character, and paroxysmal in occurrence. The pain of perforation was most closely simulated by that occurring in some cases of hemorrhage, that from phlebitis, and that of unknown origin. 5. In about two-fifths of all cases with pain during the course no cause could be found. Should this occur with other abdominal symptoms the condition may much resemble perforation.

2. **Cataphoretic Spinal Anesthesia.**—Corning reports experiments to produce spinal anesthesia by cataphoresis and details methods. He performed it on a man in whom it was thought unadvisable to give general anesthesia, by making an incision and injecting through an insulated tube, which passed down through the ligamentum subflavum, fifteen minims of a 2 per cent. solution of hydrochlorid of cocain, which was deposited between the dura and vertebral canal. Then the electric current was passed from the tube to a sponge on the abdomen with a current of .3 milliampere. Anesthesia appeared slowly, fully one-half hour being required and the ether was begun to be administered when it was found that the patient was anesthetic and the ether administration was discontinued and the operation carried on under the cocain anesthesia with success. The operation was an osteotomy of the foot and the anesthesia of the legs persisted for an hour afterwards. While the operation was physiologically a success, Corning concludes it was a failure practically, on account of the time necessary to induce the anesthesia and the formidable paraphernalia required. He reports the case, however, trusting that others may improve upon it or be saved from going over the same ground.

4. **Suprarenal Capsule.**—Floersheim's second paper describes the preparation of suprarenal capsule for internal use, the method of administration, giving the drug by the mouth in gelatin capsules, also the rapidity of its action and the indications. He thinks suprarenal extract is safer and better in heart disorders than digitalis, strychnin, strophanthus, or nitroglycerin, and is the most powerful heart stimulant known. The remainder of his article is taken up with histories of cases.

5. **Inebriety.**—The history of the treatment of inebriety and the legislation of different countries is given by Collins. The paper is simply a brief survey of the laws in relation to the inebriate, abroad and at home.

6. **Hernia.**—After describing the different operators' methods mentioned in his title Ford describes the stitches which he has invented: The single knot stitch, the square knot stitch, and the friction knot stitch and calls attention to the fact that neither of these is the buttonhole stitch commonly called Billroth's. The reader is referred to the article for details of these stitches.

7. **Varicella.**—Doty enumerates the signs characteristic of varicella that distinguish it from smallpox, and also calls attention to the fact that the former may occur in adults, contrary to common opinion. The signs to which he refers are: 1. Character of eruptions. The "shotty" feeling and involvement of the true skin as compared to the superficial nature of the eruption in varicella. 2. The manner in which it appears; smallpox has but a single crop, while chickenpox has successive ones. 3. The distribution or location of the eruption. In smallpox the hands and feet are almost always involved to some extent, while in chickenpox they are either not affected at all or have a very little eruption. The appearance of hard, cicatricial, and distended papules on the hands and feet especially palms and soles, is a very important sign of smallpox. The back gives one of the best localities to study varicella and while umbilication is characteristic of smallpox, what will pass for this may be sometimes found in chickenpox and some forms of syphilitic eruptions. Constitutional symptoms, of course, are not to be neglected, but the character of the eruption should be studied first.

9. **Nephroptosis.**—The subject of bandages to be employed for nephroptosis is discussed by Edebohls, who summarizes his paper as follows: Bandages for movable kidney may be divided into two general classes: 1. Simple bandages, and apparatus embodying the feature of a special kidney pad. 2. Simple bandages act by supporting the entire contents of the abdomen, sustaining and more or less immobilizing the movable kidney or kidneys on top of the intestinal mass. 3. All the relief to be gotten from bandages in cases of movable kidney is

obtainable from one of two devices, either from an elastic bandage, encircling and sustaining well the lower two-thirds of the abdomen, or from a long and low-reaching corset, fitted and adjusted with the same end in view. 4. The relief obtainable from bandages in any case of movable kidney will depend upon the presence and the degree of any associated enteroptosis. The greater the degree of associated general enteroptosis the better the prospects of relief from a bandage or corset. When movable kidney exists without general enteroptosis, no form of apparatus will prove satisfactory. 5. All forms of apparatus with special kidney pads or trusses are to be absolutely rejected because they are impotent to fix and sustain a movable kidney, and because any pressure they may exercise is injurious to either the kidney or to neighboring organs, especially the vermiform appendix, or to both. 6. In all cases in which relief of symptoms can not be obtained from either a proper simple bandage or corset, nephropexy is indicated.

10. **Version.**—The indications of version are elaborated by Marx, who classified them as follows: 1. Malposition and malpresentation. 2. Contracted pelvis, either relatively or absolutely so. 3. Prolapsus funis or allied condition. 4. For all other unclassified conditions, such as placenta previa. 5. Except under very rare conditions in all cases in which the head remains above the brim; the exception being where there is a uterine rupture or Bandl contraction. This is the only indication for forceps as compared to version when the head is above the brim. In the most of these prolonged labors, however, when the child has been already sacrificed or is in immediate danger, elective perforation should be given the preference. When the child is *in extremis*, he thinks most of saving the life of the mother and version is needed in all cases where the life of the mother is threatened, as, for example, by a uremic convulsion, or an embolus of the lung, supposing, of course, a dilatable os or one that is dilated. When such is not present, we must anticipate it with a rapid manual dilatation or deep Dührssen's incision. The following operative rules are laid down, which have been of great value to him: 1. Always be sure of the position and the presentation. 2. Be sure that the fetus is alive or not in immediate danger. 3. Do version as early as possible in the presence of an intact fruit sac, or at least as soon after the rupture of the membrane as possible. 4. Always introduce the hand according to the position of the fetal feet. 5. Always turn the child in such a fashion as to keep Nature's classic ovoid intact, that is, carry the foot along the abdominal plane of the pelvis and not away from it. The technic and details are given. The limitations of the operation are also noted. We must estimate the operation from the standard of the average pelvis and average size of the child and no operation short of perforation should be instituted in the presence of a dead or dying fetus. Our lowest limit for elective version would be in the case of a pelvis whose true conjugate is at or above 3.25 inches in the presence of an average-sized or small child. These measurements would not hold good in the presence of a large or over-sized child. The use of the Walcher position when the head is passing the contracted inlet is mentioned as of advantage, as increasing the true conjugate between one-half and three-fourths of an inch. Individual skill and experience are of importance, but he believes that the operation stands midway between forceps and Cesarean section and the field for symphyseotomy is growing smaller and smaller.

11. **Axis Traction Forceps.**—The advantages of the axis-traction forceps are dwelt upon by Grandin. He thinks that one need only be trained in their use to have fewer impossible deliveries and far less danger to the maternal parts and intracranial injuries laid to their use.

12. **Cesarean Section.**—Nine cases are reported by Cragin as illustrating the advantages of Cesarean section, which he thinks has the preference over symphyseotomy in that every step of the operation is under the control of the surgeon, the mortality is less, and convalescence more rapid and easier. Some points of the technique are mentioned and the writer expresses his personal preference to leaving the uterus as nearly intact as possible whenever it can be done. Only when infection or disease of the uterus and appendages exist or pelvic deformity is extreme does he prefer to follow the Cesarean section by hysterectomy.

14. **Spinal Analgesia.**—A summary from 50 cases, including 24 here reported by Bainbridge, is in substance as follows: 1. Cocain is more satisfactory than eucain. The anesthesia is more uniform and the unpleasant after-effects no greater. 2. Analgesia to the level of the diaphragm can be depended upon in all cases where moderate doses of a potent solution of cocain has been introduced by lumbar puncture. Sometimes the analgesia may be sufficient for operation on the upper extremities. 3. Complete analgesia including the eyes, mouth and throat has been seen. 4. The preparation as for general anesthesia diminishes all the unpleasant effects of cocain and eucain and often prevents them. 5. Moderate doses of bromids before injection frequently do away with the initial vomiting and the liability of headache is lessened. 6. In neurotic patients there are often hysterical symptoms following completion of the injection, but a calm follows, as a rule, in a few minutes. 7. The initial nausea and vomiting often occur soon after puncture, but last only for a minute or two and usually do not recur. Consciousness being preserved the danger of vomited matter getting into the lungs is practically nil. 8. The analgesia lasts from thirty minutes to four hours. 9. Depression after puncture is inconsiderable. The use of ethyl chlorid (Bengue) largely prevents pain when the needle is introduced. 10. The preparation of the patient, the use of nitroglycerin by hypodermic injection or employment of the coal-tar products with caffein, control the headache frequently seen after spinal puncture. 11. In a few cases there may be temporary motor paralysis or vertigo. 12. Spinal puncture has not affected normal or diseased kidneys. 13. Usually the tactile, muscular, hot and cold sensations are retained. The cautery at a dull-red heat causes no pain, but hot water produces discomfort. 14. Usually the patient sleeps the first night. 15. There is often a temperature of a few degrees within eight or ten hours of the operation. Whether of psychic origin or not is unanswered. The circulation and respiration are not seriously affected.

15. **Errors in Laboratory Diagnosis.**—Janeway calls attention to a number of errors which occur in laboratory clinical diagnosis In urinary examination the most conspicuous error is failure to filter the urine, which makes a delicate test impossible. The most reliable tests are Heller's, the acetic-acid, and ferrocyanide, heat and acid tests. As a general test Heller's is undoubtedly the most useful. No conclusion, however, can be drawn from the presence of albumin in the urine, excepting that it is not normal. The greatest significance of the negative test is in cardiac cases in which it gives evidence of absence of congestion of the kidney and makes the prognosis more hopeful. In the sugar test there are many serious errors, especially with Fehling's solution. It is most useful for just one purpose, viz., to exclude the presence of sugar. The tests which give positive indications of the presence of sugar are the polariscope, fermentation and the phenyl-hydrazin reaction. The second one of these has some advantages in being useful also for quantitative determination. The phenyl-hydrazin test as ordinarily given is the most unsatisfactory, but the use of pure phenyl-hydrazin, 5 drops, glacial acetic acid, 10 drops, and saturated solution of sodium chlorid, 1 c.c. to 10 c.c. of urine, boiling vigorously and letting cool slowly in the air has given him most excellent results. Sugar in the urine does not necessarily signify diabetes. The difficulties of clearing a mixed twenty-four hours' urine is considerable and without this a fairly representative sample is hardly to be obtained. An excellent method where it can not be had is to take equal parts of the water passed in the late afternoon before retiring and upon rising in the morning, but this will not suffice for careful quantitative methods. One of the commonest errors in connection with specific gravity is to conclude that the urine does not contain sugar, if it is below some arbitrary point, 1030 or 1020. He has often seen it with a specific gravity of 1015. Another mistake is failure to recognize the significance of the urine of constant low gravity and increased quantity. If albumin is absent such urine points strongly to contracted kidney. As regards the quantitative de-

termination of urea, it is so dependent upon diet and other factors that he does not think it well to draw many conclusions from a single examination. For practical purposes the total solids, as indicated by the quantity specific gravity ratio, affords as much and less often misleading information. No error is greater than to neglect microscopic examination and certain points are not sufficiently brought out in the text-books. One of these is the occurrence of calcium oxalate in a form closely resembling red-blood corpuscles in size and shape. Janeway has found casts without albumin where he has taken particular pains in applying the trichloracetic acid test, and such findings illustrate the necessity of making one's observations independent of each other. The error of making a diagnosis of diabetes from the existence of sugar or of kidney disease on the presence of a few casts is remarked upon. In sputum examination the tubercle bacillus is not the only thing to be looked for. The examination of the unstained expectoration may be of value. The occurrence of Charcot-Leyden crystals and Curschmann's spirals in asthma is mentioned. Errors in the examination for tubercle bacilli are noted and he particularly speaks of the failure to insure sputum from the chest. In blood examination, the individual idiosyncrasies as regards color estimation in the hemoglobinometer is noticed and the numerous errors possible in the search for malarial organisms. The new polychrome methylene-blue stain just perfected by Dr. L. B. Goldhorn places the staining of malarial parasites within the ability of all and is an easy safeguard from any former errors. The time of examination is also important, the best is about eight hours before the chill, the parasites then accumulating in the internal organs. The mistakes in the diagnosis of leucocytosis, etc., are mentioned and he thinks that the possibility of the confusion of specimens in a large laboratory is a matter of importance. He has known of cases where a laboratory diagnosis of typhoid led to overlooking a large internal abscess for three weeks, the mistake being caused this way. In the examination of the stomach contents errors are possible. The finding of lactic acid has no meaning if milk has been taken, and this often occurs with a patient using a roll for his test breakfast, made with milk. Töpfer's method with the use of alizarin is rejected by the writer, and he uses Congo red to estimate the total free asid and acid salts. The usual tests for lactic acid, Uffelmann's, Kelling's, etc., are subject to so many errors that a positive reaction should not be considered due to lactic acid unless corroborated by a test made in a solution of an ether extract of the filtrate. The most we can obtain by our analysis of the gastric contents is the functional diagnosis. Errors of judgment are possible. The influence of the nervous system on the stomach is so important that the most searching examination of the psychic and physical conditions of the patient can alone guard against serious errors.

16. **Contusions of the Abdomen.**—The author here attempts to present the symptomatology of the conditions that are liable to occur in abdominal contusions and discusses them in detail. The injuries enumerated are those of the ureter, bladder, liver, kidney, stomach, intestines, spleen, and pancreas; in each case the symptoms, diagnosis and treatment are noticed at length. The general considerations are given at the end of the article. The injury may be externally slight and severe internally, or vice versa. The question to be settled following abdominal contusions is whether operative interference is required. An exploratory operation will often be justified, even demanded. Shock alone may be without discoverable pathologic lesions and improvement from this condition is a valuable indication that the patient can bear the operation. Ordinary shock is recovered from in about three hours of the injury. Increasing shock should suggest intra-abdominal hemorrhage or visceral rupture. The absence of shock does not mean the absence of serious lesions. In profound and continued shock active operative interference is absolutely contra-indicated. Hemorrhage, pain, tenderness, vomiting, distension and rigidity are valuable symptoms, the last two suggesting peritonitis and serious infection. The questions to be answered in any case are: Is operation necessary? Are there lesions of viscera? Two classes of cases should not be operated upon at first: 1, that class in which little or no shock is present; in which there are absolutely no localizing signs; and 2, that class in which profound shock, amounting perhaps to collapse, exists. Immediate operation is demanded in persistent moderate shock, with or without localizing signs. Immediate operation is demanded in cases of progressing hemorrhage. Immediate operation is demanded in cases of peritoneal infection. For the details of treatment, etc., the reader is referred to the original article.

17. **Antistreptococcus Serum.**—Five desperate cases of puerperal sepsis treated with antistreptococcus serum reported by Higgins, do not seem to show it to be a valuable therapeutic agent in these conditions. Its power is limited to a very narrow line of cases. It has a very marked depressing effect on the patient and the directions advising its administration off-hand in large and frequent doses should not be followed with very sick patients. He thinks it is best endured by the patient and less danger follows a dose of 10 c.c. repeated not oftener than every twelve hours. In 20 c.c. doses it is a remedy not without danger. He believes that the serum has no place in the routine treatment of puerperal sepsis and should be only used in desperate cases after failure of other measures; if no improvement is shown after two or at the most three days of its use and after the total injection of 40 to 60 c.c. it should be discontinued.

20. **Puerperal Polyneuritis.**—The case reported appears to have been in the first stages, one of neuritis, after several months passing into a poliomyelitis. The rapid ascending progress of the disease was the first indication of the involvement of the spinal cord. The cause is not clear though a number of other cases of puerperal poliomyelitis have been reported. There was severe vomiting during pregnancy, and the author calls attention to the view of Clifford Allbut that such vomiting is due to toxins and suggests that the same toxins may induce neuritis.

21. **Localization of Sound.**—Randall calls attention to what he thinks is a neglected point in regard to unilateral deafness, that is the difficulty of locating sound which must be experienced by its victims. In ordinary hearing there is a sort of stereoscopic action or triangulation by which sound can be rapidly located; but with only one ear hearing, one side of the brain has to do the work of two. He thinks that it is time that the value and importance of "binaural hearing" should be better appreciated.

22. **German Clinics of To-day.**—Hemmeter points out certain tendencies in German clinics, viz., putting the personality of the patient in the foreground of the treatment, not the constitution or disease, and the tendency to make use of a large variety of remedies and many methods. The dietetic treatment, for instance, has been wonderfully evolved. He points out the differences between German and American habits of diet, as indicating the need of a special dietetic journal here. The prophylaxis is also an important point with them and all the humanitarian devices, which are greatly worked up in German clinics. Much attention is also paid there to hydrotherapeutics and aero-therapeutics, the use of hot and cold air, gymnastics and massage. The German internal clinic of to-day is no longer under the ban of pathologic anatomy, but its highest aim is the perfection of treatment, to help and to heal.

24. **Deaths from Anesthetics.**—Galloway calls attention to the common carelessness in regard to the use of anesthetics and gives instances which have occurred under his observation. He says that while many operations are practically devoid of danger, no anesthetic is ever administered without jeopardizing the life of the patient. Administration of anesthetics by an inexperienced man is most strongly condemned. He has, he says, helped to resuscitate 17 patients from an overdose of the anesthetic, but has not had a case of his own for nearly six years until within a few weeks. This case was reported as illustrating the dangerous power of chloroform and the suddenness of its action, which sometimes may make unpleasant complications. He claims that if unnecessary deaths occur from anesthesia the responsibility extends beyond the anesthetizer

and includes the medical colleges which ignore its importance; and make no effort to teach it properly, if at all, and that confer diplomas which the people accept as the evidence of a training which the student has not received.

25. **Esophoria.**—Latent congenital squint is discussed by Valk, who gives a number of cases showing the benefit of operation by shortening. In all the same operation was performed, shortening the muscle by a single tuck at insertion of the tendon into the sclera and leaving the catgut suture to be absorbed.

26. **Strangulated Hernia.**—The mortality in strangulated hernia, according to Lathrop is due to delay in operation and to unnecessary taxis. Taxis is never free from danger and should be discarded, excepting in emergencies. Strangulated hernia is invariably fatal unless relieved and early operation will nearly always succeed.

28. **Vaginal Operation.**—In the continuance of this article Pryor gives the further details of his methods. He does not consider the presence of pus a positive indication for the removal of pus tubes. In young women in the first attacks he generally contents himself with palliative procedures of evacuation. After repeated attacks a radical operation is preferable. When the adnexa of both sides are so damaged as to require removal the uterus is not only a useless organ, but a mischievous one. He goes farther and protests against the removal of one pyosalpinx and leaving the other, though apparently normal. The chances of any functional utility of the other one are too slight to be considered. The indications for ablation in genital sclerosis are found in the subjective symptoms rather than the physical signs. He is outspoken in his opposition to myomectomy, excepting in rare instances. A clean curettage supplemented by the administration of mammary extract is without risk, and causes greater reduction in size than myomectomy. If he operates for fibroids he uses the radical operation, but does not operate unless disagreeable symptoms are present. The mere presence of fibroid is not an indication. In certain cases of pus and fibroids he never operates through the vagina if symptoms of appendicitis are present, or where the uterus is broken down in puerperal sepsis laparotomy is demanded as also is the case in large fibroids, but these form only a small percentage of the cases. When the complications of pus cases are distinctly abdominal, the operation must proceed through the abdomen. Complications and accidents of the vaginal operation are noted and Pryor claims better results than the average in laparotomy. He has never found any shortening of the vagina after vaginal ablation.

29. **Inguinal Hernia.**—The operations for inguinal hernia are reviewed by Ricketts, with the chances of recurrence, etc. He calls attention to three causes of failure in radical operations: 1. Deficient origin (attachment) of the internal oblique. 2. Pressure on the walls of the abdomen by the truss (where one is worn). 3. The length of time hernia has existed, especially in the aged. In making a radical operation he says do not divide the fibers of the tissue. Do not cut the blood vessels, and nerve repair will be more certain and rapid, for the reason that the vitality of the tissue will be preserved, but the operator should cut out the fat.

31. **Anaerobic Bacteria.**—Le Roy quotes from a report read by Veillon at the International Medical Congress in Paris last summer on some hitherto overlooked and unknown anaerobic bacteria that, "Following an extensive systematic series of researches we have been able to isolate 14 species of strictly anaerobic organisms. These anaerobes are the principal agents of a whole series of affections of a gangrenous or putrid nature. They have been isolated in otitis, mastoiditis, cerebral abscess, pulmonary gangrene, putrid pleurisies, dental caries and suppurations of dental origin, sinuses, phlegmons of the orbit, gangrenous pericystitis, appendicitis, peritonitis, hepatic abscess, periuterine suppurations, certain puerperal infections, bartholinitis, urinary abscesses, extravasation of urine, vesico-renal and peri-renal infections, and gangrenous phlegmons. The details of the technic employed in the special study of each of the diseases in which these bacteria have been encountered will be found in a series of works undertaken in the laboratory of Prof. Grancher. We will here content ourselves with giving a resume of the biologic properties of these microorganisms. Exclusively anaerobic, they have the property of necrosing living tissues and at the same time to cause them to undergo a process of disintegration analogous to putrefaction; these are the agents of the gangrenous and putrid processes. Not only do they act locally but by the toxins which they secrete as well, they provoke a veritable general poisoning which is evidenced by the symptoms of constitutional infection and in typical cases by an alteration in general condition which may be termed the putrid facies or cachexia. In the study of their toxins and by immunization we soon hope to have a serotherapeutic treatment which will be truly rational and efficacious." LeRoy has in progress some work on the same line with which he hopes to be able to verify the above.

32. **Compound Fractures.**—Moriarta reports a number of cases of compound fractures and urges that when the pathologic condition is not positively demonstrated in such cases, the puncture or laceration be enlarged, the bone fully exposed, approximated and held there, provided the physician is sure of his technique and the patient's condition does not contraindicate it. The danger, he thinks, is insignificant while the advantages of the method are great.

34. **Digitalis.**—That the impression given by some textbooks that the symptoms of cumulative digitalis poisoning has no real gravity, is erroneous, is held by Zugsmith, who reports a case in which artificial heat was employed with great advantage in counteracting it. The theory, however, of the method he thinks was wrong though the results were good.

35. **Prolonged Intubation.**—According to Rosenthal the rule in intubation should be to remove the tube within five days, unless it be removed by expectoration before and not further required. If the tube is required longer than such time it would be hard to say when it should be removed and the case may be held to be abnormal. All cases requiring the tube longer than five days must be classed as cases of prolonged intubation. The treatment consists in large doses of strychnia and constant re-intubation and extubation daily or every two days with progressively smaller tubes until the case no longer requires it. An illustrative case is reported.

36. **Carbuncles.**—The treatment of carbuncles recommended by Carothers is prophylactic, abortive, medicinal and operative. Many cases can be prevented by cleanliness and where damage to the kidneys and liver exist these should be looked after. If seen in its beginning the carbuncle can often be aborted by injection of a few drops of carbolic acid, or a white hot needle thrust into the center of the inflammation. In more advanced cases he uses a sharpened stick of caustic potash thrust down to the underlying fascia in the center of the carbuncle producing a necrosed crater and this relieving tension and avoiding the more extensive operation of the extirpation. The medicinal treatment is the relief of pain by tonics, diet, etc. He prefers for the local treatment equal parts of castor-oil and turpentine applied to the carbuncle on absorbent cotton or gauze, which is to be kept thoroughly saturated. It relieves pain at once so that in most cases no narcotic is required. It prevents suppuration. He first limits the inflammation and promotes granulation. The most rational operative treatment is the burning away of the entire mass with the actual cautery, creating the carbuncle into a burn of the second or third degree. He does not look with favor on the cutting operations, especially the crucial incisions or curette, which may do serious damage.

38. **Complicated Ovarian Tumors.**—Ries reports two cases interesting on account of the diagnostic difficulties, and emphasizes the following two points: 1. If a pelvic suppuration appears to be present and the history of the patient gives no clue to its cause; remember suppurated ovarian tumors! This is important because, 2, conservative operations which might be successful in simple pelvic suppurations, would fail to cure suppurated ovarian tumors.

43. **Two Starvations.**—The conditions here considered are rickets and scurvy, and the importance of the early diagnosis of the former is insisted on. Rickets is fat starvation, and scorbutus is starvation from the anti-scorbutic element, what-

ever that may be. O'Day considers that these disorders are largely caused by artificial foods, and that fresh raw milk from a healthy cow, properly diluted, is far better. The treatment of rickets is mentioned: cod-liver oil stands pre-eminent as a remedy. The child developing rickets should be given from 15 drops to 1 dram three times a day. If this is not taken kindly, some other kind of fat is indicated, and bacon comes next in its efficiency. Butter and cream can also be given with good effects. For scurvy anything that supplies the anti-scorbutic element is all that is indicated. Fresh raw milk contains this, and fruit, especially oranges, is a specific for the disease.

44. **Uric Acid Toxemia in Children.**—After an analysis of the condition with a table of fifty-seven cases, Brandt calls attention to the various conditions which may depend on a uric acid toxemia including, eczema, indigestion, urticaria, pharyngitis, tonsillitis, joint- inflammation, etc. In a large proportion of these cases there was heredity. He insists on frequent quantitative analysis of the urine, made by a competent man in these cases.

50.—See abstracts in THE JOURNAL of March 23, p. 832.

52.—Ibid.

53.—Ibid., p. 831.

57. See THE JOURNAL of March 30, p. 891.

63. **Neuralgia.**—Hughes objects to the surgical treatment of trifacial neuralgia, which he thinks can be generally managed by medical means. His chief reliance has been belladonna or its active principle (atropin), aconite, strychnia, large doses of quinin with gelsemium, hypophosphites of iron, with locally, ether, menthol, heat and electricity. He also uses arsenic in minimum doses and some coal tar anodynes. In some cases he has found it necessary to employ large doses of muriate of ammonium after Anstie's method, 30 gr. three times a day. He has done this often in combination with bromid of ammonium, and found other bromids often useful as alternatives. His special objection is to Gasserian ganglion excision which he thinks is unnecessary and inapplicable because trifacial neuralgia is not exclusively a disease of this ganglion or of the fifth nerve, and the danger of operation with its uncomfortable side-effects are such as should generally prohibit it. If he was to suggest a neuro-surgical plan of treatment when medical treatment failed, he would prepare the patient for radical relief by securing hopeful consent to combined surgical and neurological treatment, put him or her to bed, give chloroform, extirpate the involved peripheral nerves if desirable, keep both eyes closed as long as one would keep them closed after Gasserian ganglicctomy, keep visitors away, and use proper medication for six to ten weeks. The patient should be treated internally and constitutionally as well as locally.

70. **Benign Tumors of Skin.**—In this article Buxton describes the gross and microscopic appearances of growths such as keratomas, papillomas, akanthomas and the various forms arising from epithelial appendages, sweat and sebaceous glands and ducts. The different forms are elaborately illustrated, but the article itself is not suitable for a condensed abstract.

72. **Impetigo Contagiosa Bullosa.**—The culture and inoculation experiments of Engman with bullous impetigo are reported, together with a general description and discussion of the condition. In seven out of the eight cases examined, pure cultures of the staphylococcus aureus were obtained, in one the streptococcus and a short bacillus normally found in the skin were also found.

79. **Paralysis of Anus Sphincters.**—Seventy-six cases of paralysis of the sphincter of the anus following forced dilatation, lasting from several months up to absolute permanency have been found by Andrews. He has also learned of 7 deaths from this cause. The dilatations were due to all sorts of methods from simple insertion of the fingers to insertion of the whole hand. He says the anus and rectum are in some patients very small congenitally, and in others ulceration has dangerously thinned their walls, cicatrization has contracted their diameter or disease rendered the tissue fragile. In one case a rectal bougie 11 cm. in circumference caused the death of the patient. The conclusions he offers are the following: 1. There are few internal disorders of such location and importance that they imperatively require the insertion of the hand for the purpose of diagnosis or treatment. 2. The case may be so important that the peril of omitting the exploration is greater than the danger of making it. 3. In that case the insertion should be made boldly, though with care, but it should never be done where such urgent necessity does not exist.

81.—See abstract in THE JOURNAL, XXXIV, p. 1490.

82.—Ibid.

83.—Ibid., p. 1416.

84.—Ibid., p. 1491.

98. **Uterine Displacements.**—Davenport's method of treating uterine displacements with adhesions is a combination of packing and massage followed by the use of a support. He places the patient in the Sims' position and packs the vagina firmly with pledgets of cotton soaked in glycerin. Pressure is what is required; careful and systematic packing will give this. The glycerin relieves the congestion and promotes absorption. This first packing is allowed to remain two days. If it becomes loose it should be replaced and the treatment should then be repeated and firmer packing substituted. This can be left two or three days. After two or three of such treatments the condition of the organ should be investigated and what he calls massage be used. The patient is placed on the back and an attempt made to dislodge the uterus. With a double hook in the anterior lip it is drawn down as far as it can be without too much pain and with one or two fingers in the vagina the uterus is lifted. If bands of adhesion are felt, they may be stretched, and lightly massaged and the same done to the masses at the sides. This should not be prolonged over a very few minutes, and the same process repeated after two or more treatments. Definite results either positive or negative should show themselves in two or three weeks. The interval between the two menstrual periods is usually sufficient to demonstrate how much can be done. He says it is surprising to see how much stretching of adhesions can be done, what good results can be obtained. If the adhesions are very dense and little can be done, and the patient's sufferings marked, an abdominal operation should be undertaken, but it should be a radical one. It is better under these circumstances to remove the appendages and to amputate the uterus. If this is not done the breaking up of adhesions will not prevent their being renewed.

99. **Dysmenorrhea.**—Most cases, according to Judd, are due to congestive inflammatory disease of the uterus and its adnexa, varying from a simple endometritis to a metritis or perimetritis, or to prolonged inflammation of the adnexa, aided by the local neurotic condition of the pelvic ganglia, which conditions may be congenital, or brought about or aggravated by the inflammatory conditions of the pelvic organs. In a certain proportion of cases the neurotic condition is a larger element in the causation of the pain than the inflammatory condition. The volume of cause, so to speak, must of necessity vary with the individual.

101.—See abstract in THE JOURNAL, XXXV, p. 1424.

102. **Uretero-Intestinal Anastomosis.**—In Kirkley's case there was, after abdominal section made for the removal of appendages, the uterus being left, a combined fecal and urinary fistula with common outlet. Owing to the hemorrhagic diathesis, the enormous quantity of pus, and the patient's condition, operative procedure to close the fistula was not to be thought of and free drainage and washing out was relied upon. In about two weeks the urine appeared through the fistula and soon after fecal matter, but at the end of twelve weeks the opening had entirely closed, and after the urine ceased to escape through the fistulous opening, it passed per rectum and has done so ever since the operation. The general health has been good, bowels regular, uterus freely movable, though it still gives trouble and hysterectomy may yet be required. The operation was made under strictly aseptic measures and it seems impossible that infection occurred at the time and the extensive suppuration that occurred, involving the intestines and ureter, probably destroying the latter, is suggested as having arisen from the intestines. A fecal fistula must have formed

into which the divided or destroyed end of the ureter emptied and it seems to be a case in which nature shows us the possibility of an indirect anastomosis with the intestine.

103. **Cancer of the Uterus.**—The operation described by Bovee is a modification of those of Werder, Ries and Pryor. He first uses a vaginal douche of corrosive sublimate 1 to 2000 followed by loose packing of the vagina with bichlorid gauze. 2. Abdominal incision, and placing patient in Trendelenburg position. 3. Ligation of ovarian vessels at the wall of the pelvis, and securing them at the uterine cornua with forceps or ligatures. 4. Separation of bladder from uterus and broad ligament. 5. Partial dissection of the ureter from the iliac artery to bladder, and placing two silk loops around each as guides, ligating and severing the round ligaments at the pelvic wall; splitting the broad ligament and ligating the uterine vessels close to the origin of the uterine artery; dividing broad ligaments at the outer ends; cutting away the utero-sacral ligaments close to the pelvis, and continuing the dissection down outside the vagina near the vulva. The glands and fat are dissected out from all exposed denuded surfaces up to the iliac junction and down to the bottom of the dissection, as well as along the lateral margins and slightly posterior to the rectum. 6. Push all loosened structures down into or through the vulva, and pack above with sterile gauze. Over this gauze suture peritoneal covering of bladder to rectum and posterior margins of peritoneum. Close abdominal incision. 7. Place the patient in the lithotomy position and, grasping the cervix uteri with a volsella forceps, pull out the loosened structures and, by a circular incision through the vaginal wall, meet the edge of the dissection from above. The end of the gauze packed in from above is pulled into the vulvar opening for easy withdrawal about the fifth day. He has operated 15 times, with 1 death and 2 recurrences since March, 1898.

115. **Otitic Extradural Abscess.**—Randall says that in acute as in chronic cases very extensive intracranial collection of pus can occur with minimum symptoms, and this not only in patients with extra thick mastoid cortex, but in some where the yielding of the bone has been exceptionally quick. Free incision of the soft parts may be reserved for cases with fluctuation. It should then be employed as a step to thorough exploration of the bony structures, without which the surgeon is in the dark. The antrum should be freely opened in acute cases and all the tympanic cavities in chronic, not only for drainage, but for thorough exploration, and every portion of diseased or suspicious bone curetted away. If this leads the operator through the inner table to the dura, he should follow the clue without hesitation. Extradural abscesses well evacuated are wonderfully harmless as compared to the conditions when confined. Five cases which led him to these conclusions are reported.

127. **Rectal Reflexes.**—Burke reports several cases where reflex symptoms such as backache, pain in the thighs, general lassitude, abdominal pain and general malaise accompanied rectal ulcers and were relieved by their cure.

128. **Epilepsy.**—From the study of several cases, Lindley concludes that the removal of the ovaries offers very little hope in the great majority of cases of epilepsy, but there is now and then a selected case in which operation is justifiable. The removal of the uterus leaving the ovaries intact, according to some investigators is a promising operation and he shall feel inclined to try it in any future opportunity. In one of his cases, in a girl 19 years of age in whom convulsions seemed to have special connection with the menstrual periods, oöphorectomy has seemed to produce benefit thus far, though only a short time has yet elapsed.

137. **Adrenalin.**—After first noticing the work of Abel and von Furth and their products, epinephrin and suprarenin, neither of which was obtained in the perfectly pure state, Takamine describes his adrenalin, which he considers the isolated active principle of the suprarenal gland. It is a light, white, microcrystalline substance with slightly bitter taste and leaving a slightly numb feeling on the tongue where it has been applied. When dry it is perfectly stable. It shows a slightly alkaline reaction on moistened litmus paper, is soluble with difficulty in cold water, but more readily in hot, the crystals separating after cooling. The colorless aqueous solution is easily oxidized in the air, turning to red and eventually to brown. It is easily soluble in the acids or alkalies, but not in ammonium hydroxid or solutions of the alkaline carbonates. With ferric chlorid a beautiful emerald green color is produced, which by careful addition of caustic alkali becomes purple or even carmin red. Strong acid prevents this reaction, giving only a dirty yellowish-green. It reduces silver salts and gold chlorid very energetically and turns the liquid red. Oxidizing agents such as ferricyanid and bichromate behave the same way. He has produced three kinds of salts, hydrochlorates, sulphates, and benzoates by dissolving adrenalin with three different acids, and evacuating, in vacuo, over strong sulphuric acid. In the course of time the residues became brown brittle amorphous masses, deliquescent in the air. Its physiologic activity is astoundingly strong. A solution of 1 to 10,000 blanches the normal conjunctiva in thirty to sixty seconds. Intravenous injection produces an enormous rise of blood pressure, and 0.000008 of a gram is equal in its effect to 0.005 of a gram of suprarenal extract. Adrenalin administered in quantity of one fourteen-millionth part of one gram per kilo of body weight will produce distinct physiologic effects. It is the most powerful astringent and hemostatic known, and the strongest stimulant of the heart. It is non-irritating, non-poisonous, and non-cumulative, and without injurious effects. It has given satisfactory results in the treatment of acute conjunctivitis, some cases of deafness, bloodless operations on the nose, laryngeal phthisis, hay fever, nasal hemorrhage, "bleeders," diseases of the heart, nose and throat, asthma, laryngitis, urethral disease, Addison's disease, exophthalmic goiter, etc.

138. —**Scopolia Carniolica.**—Wood's investigation gives the comparative action of scopolia carniolica or so-called "Japanese belladonna," with atropa belladonna and concludes as follows: Scopolia carniolica in its physiological action so closely resembles atropa belladonna as to be practically indistinguishable. Like belladonna, scopolia elevates the blood-pressure, paralyzes the pneumogastric nerve, is primarily a stimulant of the respiratory center, and in fatal dose kills by asphyxia. In the frog it is a paralyzant to the spinal cord and to Setchenow's center, and when brought in direct contact with a motor nerve lessens its function. The dominant alkaloids of the two plants, however, are probably not identical, since we find the scopolia apparently a little more depressant to the spinal cord, and distinctly more toxic.

142.—This article has appeared elsewhere. See THE JOURNAL of March 30, title 32, p. 919.

FOREIGN.

British Medical Journal, April 27.

Remarks on the Training of Ophthalmic Surgeons. A. FREELAND FERGUS.—The importance of proper training for the ophthalmic specialist, especially if there is to be a separate register for them, is noted and the lack of such training in the English system of education remarked. Fergus thinks that even in the preliminary education a difference should be made: a better acquaintance with elementary mathematics ought to be required than of the average student and he shows how a knowledge of trigonometry and analytical geometry may be useful and how the lack of it lead to mistakes in text-books, articles, etc. The earlier years of his medical education should also embrace biology, chemistry, human anatomy including histology, and the physiological course should include adequate instruction in physiologic optics, movements of the eyes, the cerebral mechanism of sight, etc. A knowledge of physics is essential and the student should be required to attend an ophthalmic laboratory for at least twelve months, should master such instruments as the spectroscope, spectrometer, spherometer, and the diffraction grating. These are, of course, independent of general medical studies including pathology, therapeutics, etc. A course in special pathology is particularly desirable. The amount of attendance on formal lectures is difficult to determine, but clinical work should be compulsory and cover a period of at least three years, taken up entirely with examination of patients under competent teachers.

On the Advisability of the Inclusion of the Study of Anesthetics as a Compulsory Subject in the Medical Curriculum. DUDLEY W. BUXTON.—At present there is no uniform teaching of anesthetics in Great Britain and the importance of this is insisted upon by Buxton. One thing that is especially dwelt upon is "aloofness" from the surgical aspect of the operation, as of paramount importance. This does not mean that the anesthetist should neglect being of aid to the operator, but he should concentrate his mental powers upon establishing and maintaining a perfect degree of narcosis without any swerving of his attention from his business, all other matters being secondary. He suggests that a resolution be passed by the General Medical Council compelling all medical students before applying for final examination to offer evidences of having studied the practice of some recognized anesthetist. This instruction should comprise a course of lectures dealing with the theory of anesthesia, its physiology and practice and include familiarity with common agents, mixtures and apparatus. He should also offer proof of having administered nitrous oxid gas, ether and chloroform. As a minimum an experience of fifty cases might be accepted, at which the student has been present. Of these at least twelve should have been conducted by him throughout. The student should also have obtained a certificate of proficiency from a recognized teacher. The final examination of the students should include tests of their knowledge of anesthetics, both practical and viva voce.

On Certain Practical Applications of Extract of Suprarenal Medulla. E. A. SCHAFFER.—The writer makes the suggestion that since observations show that this extract has a greater power in causing contraction of the musculature of the uterus than any other drug, whether applied directly or introduced into the circulation, it would be very valuable to control hemorrhage and to strengthen uterine contraction in obstetrics. The solution he would recommend to be used is an infusion of dry medullary substance, 30 grains to the pint of sterilized water and injected while still fairly hot; he suggests the solution as a powerful styptic, and says its efficiency can be still further increased by the addition of 60 gr. of calcium chlorid. Another use suggested by the same author is in sudden cardiac failure, for the relief of shock, or hemorrhage or an overdose of an anesthetic. In these cases the sterilized decoction which may be of the strength of 5 gr. to every ounce, must be filtered, and should be injected with a hypodermic syringe very slowly into a superficial vein or even in extreme and hopeless cases into the heart itself through the thoracic wall. He has seen such remarkable results in animals from this method, among them complete resuscitation of the heart when circulation has apparently ceased, that he thinks its trial in the human subject in this class of cases should be called for.

The Dietetic Value of Sugar. H. WILLOUGHBY GARDNER.—From the statistics Gardner finds that Great Britain and the United States consume a larger amount of sugar, *per capita* than any other countries and he attributes to this the vigor and robustness of the Anglo-Saxon race. He goes over the dietetic facts in regard to sugar, showing that it is a muscle food, and that it should be used in cases of fatigue; Alpine climbers and Arctic travelers find its use advantageous. During the past year he has strongly recommended sugar to patients who he thought would be benefited and has been greatly pleased with the results. He mentions a case where it apparently rehabilitated a case of seemingly advanced phthisis after influenza followed by pneumonia and in which the symptoms quickly disappeared after giving 4 ounces per day of pure cane sugar, not counting jam and cakes, of which the patient took freely. The objections to the diet are mentioned; its effects on the teeth he thinks are due to the impurities and not to the sugar itself. Alimentary glycosuria should be watched out for and it is well to test the urine during the treatment. In the case of a child with disorders of the mucous membranes it would be contraindicated, as well as in decided diabetes and glycosuria. In gout and rheumatism, he is inclined to think that the prohibition of sugar in the latter may be only due to prejudice. In gout the condition is more clear. Those who are gouty and fat should avoid sugar like poison, as they can not utilize fats and carbohydrates, but those who are gouty and thin are in a different category. One must limit their nitrogenous food, but may give them sugar and starch without much fear. There are many who do not fall distinctly in either class, and their diet must be determined experimentally and may have to be varied from time to time.

A Preliminary Note on the Hibernation of Mosquitoes. H. E. ANNETT AND J. EVERETT DUTTON.—Noticing the observations of Wright in regard to the hibernation of mosquitoes, abstracted in our issue of May 4, p. 1282 the authors give their own observations. They find that the culex and anopheles hibernate during the winter in damp places or old farm-houses, built without damp-proof courses. In this condition the position of both culex and anopheles is peculiar; their legs are spread out on the walls and not in their usual resting positions as in summer. They conclude that there is no doubt but that mosquitoes of both genera hibernate during the winter months in England, and Wright shows that larvæ also provide for the continuation of the species during the cold weather.

The Lancet, April 27.

The Sometimes Successful Treatment of Cases of Apparently Incurable Blindness. CHARLES BELL TAYLOR.—Galvanization in optic troubles is specially insisted upon by Taylor, who reports remarkable successes in blindness after optic neuritis, corneal ulcers, etc. Next to this he would class mercury which may be administered under the form of a blue pill, ointment, vapor, and sub-conjunctival injections. For the latter purpose he prefers the cyanid. As a derivative he mentions blood-letting, which he thinks is too much neglected, also baths, counterirritants, etc., which distract the attention of the nervous system from the disease. The cases he reports are apparently quite remarkable, as regards his success.

On Two Cases Bearing Upon the Question of the Limitations of Enterectomy. ARTHUR E. BARKER.—Two cases are reported, one of a woman aged 58 years, suffering from diabetes with 6.6 per cent. of sugar in the urine. There was a malignant tumor producing stricture of the colon and obstruction of the bowels which was operated upon with removal of four and one-half inches of the gut, one inch of this being taken up by the growth. The patient bore the operation particularly well in spite of the diabetic trouble, and the amount of sugar diminished after the operation. Hitherto such a state of things has been held a counter-indication to severe abdominal operations. The operation was certainly justified in that the patient recovered in spite of diabetes, and its success is gratifying as showing what may be done under such circumstances. The second case was that of a feeble old woman aged 76, who had undergone ovariotomy, and from whom about five and one-half feet of small intestine were successfully removed for gangrene, the patient making an excellent recovery. The advanced age appeared to be no bar to most perfect repair and she did as well as a patient of 50 years younger could have done.

Journal of Laryngology, Rhinology and Otology, April.

The Treatment of Deviations of the Nasal Septum. E. J. MOURE.—The author reports an improvement on the Asch operation for septal deviations. In case of existing spurs he removes them with an osteotome of his own devising which consists of a much-elongated ring, whose ellipsoidal extremity has two opposed cutting edges. These are concave externally and very convex on the other side, meeting at an acute angle at the part destined for cutting the fibro-cartilage. The lower portion of the ring is blunt, so that when the spur is well engaged in the lumen and strong traction made, the projection is forced advantageously between the blades and is cut very close to the base. When the deviation is such as to obstruct the passage and make it impossible to pass the osteotome to enlarge the projecting part, he would begin by making one or two narrow channels by the aid of the galvano-cautery point plunged in from before backwards, parallel to the septum. This preliminary operation done, he removes with cutting pliers all parts situated externally to the region thus hollowed out, thus making an opening sufficient to introduce the instrument.

Generally at the time he removes the cartilage he stops the hemorrhage with a galvano-cautery knife, placed over the raw surface. As a rule the cut surface heals by a pseudo-membranous exudate and he does not further touch the nasal fossa, keeping the patient at rest from twenty-four to forty-eight hours. When suppuration occurs, he uses the nasal douche every morning. When there is present with the deviation not only a spur, but a luxation of the fibro-cartilage at the antero-inferior part of the septum, after asepsis, etc., he incises the mucous membrane at the extremity of the fibro-cartilage with a bistoury and detaches it over the lateral parts as far as possible, that is to say from 0.5 to 1 centimeter in depth and to each side. The fibro-cartilage that is bared is resected with scissors or bistoury, and the cut mucous membranes are united with one or two sutures. The wound generally heals in eight or ten days. In this procedure it is necessary to be careful to resect the fibro-cartilage sufficiently well forward in the nasal fossa, as there is always a tendency to leave a considerable portion which still juts out below the septum. When this operation is finished and the patient has recovered, the spur only remains to be removed in the way already described. When these wounds have healed and cicatrization is completed, that is in about a month, he attacks the deviation. Eight days before operating he sprays the fossæ night and morning with a solution:

R.	Oleate of cocain	15
	Powdered menthol	25
	Thymol	5
	Oil of vaselin	45

In operating, after antisepticizing and cleansing with boracic acid douche and cocainizing, the fibro-cartilage is cut without further anesthesia in the following manner: With a pair of curved scissors, made on the principle of the Asch shears, he introduces the blades, one into each nostril and cuts along the base of the septum as close to the base as possible for a distance of 2 or 3 c.c. beginning a little back from the nostril. Then without withdrawing the scissors he passes them to the superior part and makes a clean incision, having an acute angle with the first cutting right through the fibro-cartilage. There is then a moveable fragment held in the front by the anterior base of the septum and behind by the peripheral plate of the ethmoid and the vomer. He then takes a special tube dilator, formed of two parallel blades, the outer rigid and the inner one much longer and made of a malleable metal, which he can mould to suit. This he introduces on the side of the deviation, the fixed part turned inwards and the malleable part toward the deviation. The tubes are made rights and lefts to suit each nostril. Having thus introduced the tube he models the soft part by the help of forceps introduced with his dilator, into the shape he wishes the septum to take in its new position. The tube is left in this position for seven or eight days. The operation is performed exceedingly rapidly and is not attended with much hemorrhage. The only inconvenience is in the pain from the inflammatory reaction following the operation during the first forty-eight hours. He advises his patients to keep to their rooms during the first few days and frequently bathe the nose in boiled boracic lotion, which takes the place of wet dressings. The method has the advantage over Asch's in not obliging the operator to remove the tube in twenty-four to forty-eight hours and facilitating drainage by the two sides of the tube being joined simply at their anterior and posterior parts. After two or three days the patient can generally go about his business if the cicatrix goes on in a normal manner, but if there is a tendency to become purulent or to accumulate it is best to wash twice a day with boiled boracic lotion. If there is neither suppuration nor secretion it is best to use no local treatment and remove dried secretion only every one or two days with aseptic gauze introduced with bent forceps. Generally after the eighth day he removes the apparatus and the septum is perfectly corrected as is also the external shape of the nose. The patients often breathe better on the side operated on than the other. He has employed this operation for several years, mostly with success, especially in adults. In children the results have been less brilliant on account of their restlessness or intolerance of the apparatus, or because the septum, not completely developed at this age, has grown deformed afterwards. He thinks it is not wise to touch the septum of children before its development is a little nearer completion, that is to say before 16 or 18 years. The presence of the tube may cause some pain, but that can not be prevented. The hemorrhage is so slight that it may be entirely neglected.

Progres Medical (Paris), March 6.

Influence of Lead Poisoning on Offspring.—Bourneville, in an editorial, quotes Paul's statistics to prove that the children of parents suffering from lead poisoning are doomed to certain death in nearly every case. Only 10 children were born alive in 141 pregnancies in which the father, and only 1 out of 27 pregnancies in which the mother was a chronic sufferer from lead poisoning. Six women who had previously borne 10 healthy children passed through 43 pregnancies after lead intoxication with only two living children and both of these sickly. The French authorities have been collecting statistics in regard to the offspring of painters who have to handle white lead, and it was found that only 15 children had survived the third year, out of 141 pregnancies. The records show that in thirteen years, 5484 painters have become affected and, leaving aside the insane, paralytic and idiots, the deaths alone amounted to a total of 598. Bourneville adds that he is now collecting personal data to demonstrate the influence of the profession of house painter on the production of idiocy.

Bulletin de la Soc. des Hop. de Paris, March 21.

Infectious Origin of Zoster Fever. ACHARD.—In two cases of idiopathic zona the same bacillus was cultivated from the cerebrospinal fluid of each patient. This cutaneous trophoneurosis may prove to be traceable to infectious changes in spine and meninges, affecting the nerve-roots or centers.

Changes in Size of Right Cardiac Auricle Determined Posteriorly. TEISSIER.—A number of hitherto puzzling facts in the pathology of the lung are explained by the mechanism of the dilatation of the right auricle. Teissier has found from clinical experience, confirmed by experiments on the cadaver and radiography, that the right auricle always enlarges backward, towards the spine, and that it produces a characteristic area of dulness in the back, in the sixth, seventh and eighth intercostal spaces. Percussion should be parallel to the spine at first to determine the outlines of this rectangular area of dulness. It may be the first sign of cardiac insufficiency, as the weakness of the myocardium entails the dilatation of the right auricle in certain cases. He recently observed an instance of this in a patient dying from typhoid fever. The auricle is most enlarged perhaps, in the asystolic period of mitral stenosis, in case of adhesions of the pericardium or by a reflex dilatation. But the auricle produces the area of dulness described even when only moderately enlarged. The variations in the dulness from day to day afford valuable information for the prognosis. The compression of the pulmonary veins by the enlarged auricle in some cases may explain the puzzling congestion at the apex of the right lung noted in typhoid fever and la grippe principally. The myocardium relaxes under the influence of the infection, with resulting dilatation of the right auricle. The congestion of the lung accompanying a cardiac affection always shows a marked predilection for the right side. It is localized sometimes at the base or exclusively at the apex or generalized. This localization is probably dependent on the group of pulmonary veins, the upper, lower or both compressed by the enlarged auricle.

March 28.

A Cured Case of Tubercular Pericarditis. RENDU.—The patient was a man of 34, originally robust, but addicted to liquor, with a tubercular lesion in the lung. The protuberance of the precordial region and left half of the thorax with the intense dyspnea at the slightest effort suggested a large pericarditic effusion. This diagnosis was confirmed by the increased area of dulness which extended from the third intercostal space to blend with the liver and lung dulness. About 800 gm. of fluid were removed by puncture and later, 1250 c.c. The canula was left in place the second time and 1 gm. of pure camphorated naphthol was introduced through it into the peri-

cardium. The reaction to the naphthol was marked. For four days there were tachycardia, small pulse and pallor, suggesting imminent syncope. By the fifth day, however, the patient began to improve rapidly.

April 4.

Spinal Cocainization in Sciatica and Tabes.—Several members of the society reported that they had successfully applied spinal cocainization for the relief of sciatica and the fulgurant pains in tabes. Marie injected 5 mg. of a 1 per-cent. solution. The pains vanished for six hours and the general course of the affection seemed improved. Others reported that the sciatica recurrd in two weeks with all its former intensity. Sicard abolished the pain for three weeks in one case by injection of 4 c.c. of saline solution.

Echo Medical du Nord (Lille), March 24.

Restoration of the Lacteal Secretion by Electrotherapy. BEDART.—In eleven out of thirteen patients who found their milk drying up in the second or third month, Bedart succeeded in restoring the flow by the application of static electricity to one or both nipples for fifteen minutes daily for a few days.

Presse Medicale (Paris), April 10.

Variations in the Physical Signs in Various Stages of Mitral Stenosis. E. BARIE.—The sound of the opening of the valve is imperceptible in the first and third stages but is frequently audible in the second. The diastolic roll is deep in pitch and tone in the first, much sharper in the second and inaudible in the third stage. The first sound is snapping in the first, hard in the second and absent in the third stage. The second sound is reduplicated, with aortic precedence, in the first stage. In the second there is no reduplication but the sound is accentuated at the pulmonary artery. In the third, the reduplication reappears with pulmonary precedence.

Revue Medicale (Montreal), April 10.

Peroxid of Hydrogen in Acute Urethritis. L. RHEAUME.—The moral effect on the patient as he sees his urethra so thoroughly cleansed of pus by the hydrogen peroxid, is an important element in the treatment of acute urethritis. The injection causes much less trouble than the usual irrigation, and to say the least it is fully as effective. As the patient reclines it is much more comfortable. Rheaume uses one part of the peroxid to three of water and 1 cg. of cocain to 30 c.c. of the fluid. He injects 10 to 15 cg. and his results have far surpassed those attained with other treatments.

Centralblatt f. Chirurgie (Leipsic), April 20.

Value of Aluminum Bronze Wire in Surgery. R. PICHLER.—Silver for sutures has been completely supplanted by aluminum bronze wire in Mikulicz's clinic. Tests with various bacteria sown in Petri dishes showed that a sterile zone always surrounded pieces of silver, copper or aluminum bronze wire introduced, and that the zone was always widest around the latter. The development of the colonies was also slightly checked at some points. Clinical experience has corroborated the results of the tests. The alloy used contains 85 per cent. copper and 5 per cent. aluminum.

Dermatologische Zeitschrift (Berlin), April.

Treatment of Syphilis with Specific Serum. E. MOORE.—For seven years Moore had been testing and experimenting with the serum from syphilitics as a cure for the disease. It has never failed to arrest the symptoms and is a valuable differentiating measure for chancre, as its local application produces a marked change in a day or two, with cicatrization in a week, while it has no effect on soft chancre. He derives the serum from syphilitic subjects by applying a blistering plaster, and injects 10 to 40 c.c. every third or fourth day. He has been enthusiastically convinced of the great value of this serum treatment for a long time but has not proclaimed it nor adopted it in general practice, as he remarks: "until he had passed it through the sieve of the Congress"—the recent Latin-American Congress at Santiago, Chili, where he made a detailed report with numerous demonstrations. His experiences include about seventy-five cases, thirty of which are fully described in this article.

Deutsche Med. Wochenschrift (Leipsic), April 18.

Cardiac Neuroses. A. SCHMIDT.—The pulse in heart-neurasthenics frequently becomes accelerated with no apparent cause. It may be accelerated or retarded under the influence of emotions and movements. It may also be accelerated by pressure on some painful point and retarded by stooping. The modifications in the pulse during breathing, Schmidt announces, are an important aid in differentiating these neuroses. During deep inspiration, the heart action seems to stop completely and the tracing of the pulse is nearly a straight line, in some cases. In others the pulse persists, much retarded, and the tops of the tracings are rounded. He also calls attention to the frequent coincidence of a sedentary occupation which requires stooping, with a cardiac neurosis. This favors abnormal mobility of the heart and explains the network of congested veins frequently observed in the cardiac region in such patients.

Imperfect Oxidation of Sugar without Glycosuria. P. MAYER.—If urine contains no sugar and merely considerable "glukuron" acid, it has been accepted as evidence that the transformations of sugar in the organism are proceeding normally. Mayer announces that the blood contains "glukuron" acid in some combination and that sulphuric acid liberates it. He is now engaged in attempts to isolate this combination from the blood. In the meanwhile, he states that he has established that the presence of "glukuron" acid in the urine is an evidence of defective oxidation of sugar.

Revista Medica de Uruguay (Montevideo), February.

Cutaneous Isothermia and Cryanesthesia as Symptoms of Exophthalmic Goitre. J. DE LEON.—This writer has noticed in every case of exophthalmic goiter which he has had occasion to observe, that the peripheral temperature is the same or higher than the axillary. The patients are also peculiarly insensible to cold. They frequently mention that their exceptional resistance to cold had been noted some time before the first manifestations of their disease. This cryanesthesia subsides as recovery progresses.

Gaceta Medica de Mexico, April 15.

Rarity of Typhoid in Mexico. A. GAVINO.—Mexican physicians have always expressed surprise that in spite of the contaminated drinking water, typhoid fever is of extremely rare occurrence in Mexico. Some have believed that the typhoid bacillus must produce a clinical picture differing from the usual type elsewhere. Gavino now reports that in his eighteen months of service at the Institute of Pathology, the typhoid bacillus has never been found once in the innumerable specimens sent for investigation, nor at the autopsies, nor were any lesions ever discovered in cadavers with typhoid characteristics. The bacillus, however, was omnipresent.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

CHRONIC URETHRITIS OF GONOCOCCUS ORIGIN. By J. DeKeersmaecker, Chief of Service, Diseases of the Urinary Organs at the Centralklinik of Antwerp, and J. Verhoogen, Agrégé at the University of Brussels. Translated and Edited, with Notes by Ludwig Weiss, M.D., Attending Physician to the Genito-urinary and Skin Service, German Poliklinik. Cloth. Pp. 251. Price, $2.75. New York: Wm. Wood & Co. 1901.

DISEASES OF THE HEART. A Clinical Text-Book for the Use of Students and Practitioners of Medicine. By Edmund Henry Colbeck, B. A., M.D., Cantab.; M.R.C.P., London; D.P.H., Cantab., Physician to the Out-Patients at the City of London Hospital for Diseases of the Chest. With 43 Illustrations. Cloth. Pp. 341. Price, 12 shillings. London: Methuen & Co. 1901.

THE THEORY AND PRACTICE OF MILITARY HYGIENE. By Edward L. Munson, A.M., M.D., Captain, Medical Department, United States Army. Illustrated by 8 Plates and Nearly 400 Engravings. Cloth. Pp. 971. Price, $8.00 net. New York: Wm. Wood & Co. 1901.

A TEXT-BOOK OF GYNECOLOGY. Edited by Charles A. L. Reed, A.M., M.D., President of the AMERICAN MEDICAL ASSOCIATION (1900-1901). Illustrated by R. J. Hopkins. Cloth. Pp. 900. Price, $5.00. New York: D. Appleton & Co. 1901.

THE STOCK-POISONING PLANTS OF MONTANA. A Preliminary Report by V. K. Chestnut and E. V. Wilcox. Paper. Pp. 150. Washington: Government Printing Office. 1901.

TRANSACTIONS OF THE ONE HUNDRED AND ELEVENTH ANNUAL MEETING OF THE MEDICAL SOCIETY OF DELAWARE, Held at Rehoboth, June 12, 1900. Paper. Pp. 31. Wilmington, Del.: Sunday Star Print. 1900.

PROCEEDINGS OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY. February, 1901. Paper. Pp. 50. Price, $0.15 per copy. Philadelphia: Published by the Society.

MERCK'S 1901 MANUAL OF THE MATERIA MEDICA. A Ready Reference Pocket Book for the Practicing Physician and Surgeon Containing Names and Chief Synonyms, Physical form and Appearance, Solubilities, Percentage Strengths and Physiologic Effects, Therapeutic Uses, Modes of Administration and Application, Regular and Maximum Dosage. Incompatabilities, Antidotes, Precautionary Requirements, etc., of the Chemicals and Drugs Usual in Modern Medical Practice. A Comprehensive Collection of Prescriptions, Embracing also the Newer Remedies of Established Merit; A Classification of Medicaments; and Miscellany, Comprising Poisoning and its Treatment, Metric System and Tables, etc. Compiled from the Most Recent Authoritative Sources. Muslin. Pp. 282. Price, $1.00. New York and Chicago: Merck & Co.

New Patents.

Patents of interest to physicians, April 16, 23 and 30:

672,317. Speculum. Willard E. Dow, Braintree, Mass.
672,207. Syringe. Jesse A. Dunn, Chicago, Illinois.
672,322. Inhaler for menthol or similar substances. Theodor H. Gelhaus, Bant, near Wilhelmshafen, Germany.
671,999. Hernial truss. Francis J. Hage, Jr., Goldsboro, N. C.
672,377. Dilator. William D. Kearns, Pittsburg, Pa.
672,177. Inhaler. Wm. H. Metcalf, New Haven, Conn.
672,151. Anesthetic inhaler. Edward M. Morgan, Westmount, Canada.
672,239. Vaginal speculum. Charles J. Pilling, Philadelphia, Pa.
672,391. Abdominal supporter. Wilhelm J. Teufel, Stuttgart, Germany.
34,364. Design, syringe nozzle. Pemberton Lundy, Boston, Mass.
672,672. Medicated salt rock. Charles O. Green, W. P. Wickline, and J. B. Eaton, Centerpoint, Texas.
672,454. Pasteurizing machine. Nelse N. Nelson, Ann Arbor, Mich.
673,021. Inhaler. Wm. B. Hidden, Boston, Mass.
673,321. Syringe nozzle, Isaac N. Lincoln, Providence, R. I.
673,366. Invalid or surgical bed. Adolfo Luria, Chicago.
673,100. Invalid's walking chair, James D. Tyler, South Berlin, Mass.
34,439. Design, massage brush, Margaret Stonebridge, Garrison, N. Y.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., April 25 to May 1, 1901, inclusive:

Alfred E. Bradley, captain and asst.-surgeon, U. S. A., detailed to represent the Medical Department of the army at the tenth annual meeting of the Association of Military Surgeons of the United States, to be held in St. Paul, Minn., May 30 to June 1, 1901.

John Carling, captain and asst.-surgeon, Vols., recently appointed, relieved from duty with the 35th U. S. Vol. Infantry, to proceed to Manila, P. I., for assignment.

Joseph J. Curry, captain and asst.-surgeon, Vols., leave of absence extended.

Calvin DeWitt, lieut.-col., and deputy surgeon-general, U. S. A., detailed a member of the board at the Army Medical Museum building, Washington, D. C., to examine candidates for admission into the Medical Department of the army.

James D. Glennan, major and surgeon, 38th Infantry, Vols., (captain and asst.-surgeon, U. S. A.), detailed a member of the board of Medical Officers convened in Manila, P. I., for the examination of candidates for admission into the Medical Department of the Army, vice Major Wm. F. Lewis, surgeon, U. S. Vols. (captain and asst.-surgeon, U. S. A.), relieved.

Leonard K. Graves, captain and asst.-surgeon, Vols., now in Brooklyn, N. Y., to duty in the Division of the Philippines, via San Francisco, Cal.

John Van R. Hoff, major and surgeon, U. S. A., detailed to represent the Medical Department of the Army at the tenth annual meeting of the Association of Military Surgeons of the United States, to be held in St. Paul, Minn., May 30 to June 1, 1901.

Richard W. Johnson, major and surgeon, U. S. A., member of a board convened in Manila, P. I., to examine officers of the army for retirement.

Henry S. Kilbourne, major and surgeon, U. S. Army, member of an examining board at the Presidio of San Francisco, Cal., vice Lieut.-Col. B. F. Pope, deputy surgeon-general, U. S. A., relieved.

Charles F. Mason, major and surgeon 26th Infantry Vols. (captain and asst.-surgeon, U. S. A.), relieved from further duty with his regiment, to report to Lieut.-Col. Calvin DeWitt, president of the examining board at the Army Medical Museum building, Washington, D. C., for examination for promotion.

John A. Metzger, major and surgeon, Vols., recently appointed, relieved from duty with the 35th Infantry Vols., to proceed to Manila, P. I., for assignment to duty.

Lorin B. Ohlinger, contract surgeon, now at the U. S. General Hospital, Fort Bayard, N. M., to report to the commanding officer of that hospital for duty.

Junius L. Powell, major and surgeon, U. S. A., member of a board convened in Manila, P. I., to examine officers of the army for retirement.

Willis J. Raynor, captain and asst.-surgeon, Vols., for duty at Fort Washakie, Wyo., to San Francisco, Cal., en route for the Division of the Philippines.

Charles Richard, major and surgeon, U. S. A., detailed to represent the Medical Department of the Army at the annual meeting of the American Medical Association to be held in St. Paul, Minn., June 4-7, 1901.

Hugo C. Rietz, dental surgeon, from Washington, D. C., to San Francisco, Cal., en route for duty in the Division of the Philippines.

Elmer A. Scherrer, contract surgeon, from Fort Grant, Arizona, to Fort Washakie, Wyo., for post duty.

A. B. Smith, contract surgeon, leave of absence granted.

Frederick H. Sparrenberger, captain and asst.-surgeon, Vols., recently appointed and now in San Francisco, Cal., to duty in the Division of the Philippines.

H. H. Stromberger, contract surgeon, leave of absence granted.

Najib Taky-ud-Deen, contract surgeon, from Columbus Barracks, Ohio, to San Francisco, Cal., for duty with troops en route to Manila, P. I., and for assignment in the Division of the Philippines.

William H. Ware, dental surgeon, from Washington, D. C., to San Francisco, Cal., en route for duty in the Division of the Philippines.

Starling S. Wilcox, contract surgeon, now at Columbus, Ohio, to duty at Columbus Barracks, Ohio.

Timothy E. Wilcox, major and surgeon, U. S. Army, detailed to represent the medical Department of the Army at the annual meeting of the American Medical Association to be held in St. Paul, Minn., June 4-7, 1901.

Robt E. Williams, captain and asst.-surgeon, Vols., recently appointed, from Fort McDowell, Cal., to Manila, P. I., for duty in the Division of the Philippines.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending May 4, 1901:

Asst.-Surgeon B. L. Wright, ordered to the *Massaschusetts*, May 1.

Asst.-Surgeon S. S. Rodman, detached from the *Adams*, and ordered to the *Alert*, May 11.

Surgeon H. L. Law, retired, detached from the Recruiting Rendezvous, Buffalo, N. Y., and ordered home.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended May 2, 1901.

Surgeon D. A. Carmichael, to assume temporary command of the San Francisco quarantine station.

P. A. Surgeon C. P. Wertenbaker, to proceed to Prescott, Ark., for special temporary duty.

P. A. Surgeon J. B. Greene, detailed for temporary duty in the Bureau.

Asst.-Surgeon V. G. Heiser, to proceed to Norfolk, Va., for special temporary duty. To proceed to Quebec, Canada, and report to the United States Commissioner of Immigration for duty.

Hospital Steward W. E. Schlaar, granted leave of absence for twenty-six days.

Health Reports

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended May 3, 1901:

SMALLPOX—UNITED STATES AND INSULAR.

California: San Francisco, April 13-20, 2 cases.
Illinois: April 20-27, Chicago, 9 cases, 1 death; Freeport, 1 case.
Indiana: Evansville, April 20-27, 1 case.
Kansas: Wichita: April 13-20, 30 cases.
Kentucky: Lexington, April 20-27, 2 cases.
Massachusetts: Fitchburg, April 13-20, 2 cases; Holyoke, April 20-27, 1 case.
Michigan: Bay City, April 13-20, 5 cases; Detroit, April 20-27, 1 case; at 94 places, present.
Minnesota: Minneapolis, April 16-22, 8 cases.
Nebraska: Omaha, April 13-20, 11 cases.
New Hampshire: Manchester, April 20-27, 5 cases:
New York: New York, April 13-27, 94 cases, 18 deaths.
Ohio: Cincinnati, April 19-26, 4 cases.
Pennsylvania: Allegheny City, April 12-19, 3 cases; Johnstown, April 13-20, 1 case; Philadelphia, April 13-27, 12 cases, 2 deaths; Steelton, April 20-27, 1 case; Williamsport, April 20-27, 3 cases.
Tennessee: Ducktown, April 20, present; Memphis, April 13-20, 24 cases; Nashville, April 20-27, 14 cases.
Utah: Salt Lake City, April 13-20, 17 cases.
Philippines: Cebu, March 12, 5 cases, 1 death; Manila, March 8-16, 8 cases.
Porto Rico: To April 10, Aguas Buenas, 4 cases; Ciales, 1 case; Isabella, 4 cases; Manati, 1 case; Ponce, 34 cases; San Juan, 6 cases.

SMALLPOX—FOREIGN.

China: Hongkong, March 8-23, 23 cases, 10 deaths.
Colombia: Panama, April 15-22, 5 cases, 3 deaths.
Ecuador: Guayaquil, March 2-23, 3 deaths.
Egypt: Cairo, March 25-April 1, 2 cases.
France: Paris, April 6-13, 7 deaths.
Great Britain: England—Liverpool, April 6-13, 2 deaths. Wales—Cardiff, March 8-30, 6 cases, 1 death. Scotland—Dundee, April 6-13, 2 cases; Glasgow, April 12-19, 6 deaths.
Mexico: Mexico, April 7-14, 1 death.
Russia: St. Petersburg, March 30-April 6, 14 cases, 3 deaths; Warsaw, March 23-30, 5 deaths.
Straits Settlements: Singapore, March 2-16, 1 death.

YELLOW FEVER.

Mexico: Vera Cruz, April 8-16, 1 death.

PLAGUE—FOREIGN AND INSULAR.

Australia: Adelaide, Feb. 28, 1 case.
China: Canton, Feb. 28, epidemic; Chan Tsin, Feb. 28, epidemic; Fatshan, Feb. 28, epidemic; Hongkong, March 8-23, 22 cases, 21 deaths.
Straits Settlements: Singapore, March 7-16, 2 deaths.
Hawaii: Honolulu, March 29, 1 death.
Philippines: Manila, March 8-16, 10 cases, 8 deaths.